2012 Rattlesnake National Recreation Area and Wilderness

Limits of Acceptable Change Based Management Direction Annual Report
Missoula Ranger District, Lolo National Forest

The Rattlesnake Drainage Looking South ~ October 2012

Tables

Rattlesnake National Recreation Area

Rattlesnake Wilderness

Summary Tables

Introduction:

This is the twentieth Limits of Acceptable Change (LAC) Based Management Direction monitoring report for the Rattlesnake National Recreation Area (NRA) and Wilderness (RNRAW). Monitoring is the final step in the LAC management system. Monitoring is an ongoing, continuous process, and is instrumental for evaluating management effectiveness and sustainability of resource values and conditions for the RNRAW.

The LAC process recognizes that Wilderness conditions change and that Wilderness is a dynamic system with many forces continually affecting the landscape. These forces of change include: people and their impacts, fire, insects and disease, invasive species, as well as other forces. The LAC management direction also defines the conditions that are desirable by establishing Opportunity Classes (OC) which broadly describe natural resource and social conditions. Established indicators and standards for each OC determine how much change is desirable and if management actions are necessary to maintain or restore the desired condition of the area. Based on citizen involvement, law, and regulation, the LAC identifies the changes to the RNRAW that are acceptable rather than attempting to prevent change.

Monitoring is based upon the indicators and standards outlined in the LAC management direction. The indicators and their specific standards provide a measure of quality to effectively monitor factors and area wide issues.

The factors monitored during the 2012 field season include: education, use and users, trails and roads, Wilderness characteristics, vegetation, vandalism, wildlife, fire, policies, and goals. A complete description of the factors, indicators and standards for each opportunity class are included in this report.

Several portions of the environment were not systematically or comprehensively monitored during 2012. These include the following: riparian zones, water, wildlife, and some fish populations. Reasons for not monitoring these factors varied. Some of the factors do not have specific standards, others are to be monitored every 3 to 5 years, and some require additional support from specialists which may not have been available.

Refer to the December, 1992 RNRAW Limits of Acceptable Change Based Management Direction for a more complete discussion.

The RNRAW is a high priority resource for the staff of the Missoula Ranger District. The 2012 RNRAW management staff included:

- one permanent National Recreation Area and Wilderness Program Manager (part time NRA and Wilderness duty)
- one permanent Recreation Manager (part time NRA duty)
- one permanent District Weed Program Leader (part time NRA and Wilderness duty)
- one seasonal Wilderness Ranger (95% NRA and Wilderness duty)
- four Wilderness Ranger Interns (95% NRA and Wilderness duty June-September)

Rattlesnake National Recreation Area

Factor: Education

Table 1 Indicators and Standards for Education

Indicator	Opportunity Class	Standard
Number of formal education trips into the RNRAW	1 & 2	No limit on number of trips as long as encounter and solitude standards are not exceeded: group size limited to 10 people
	3-5	Total group size limited to 10 or fewer people
	6	Total group size limited to 50
Number of educational brochures used per year	n/a	No standard; keep track of brochures used; distinguish between classroom and field use
Vandalism	n/a	No standard; monitor number of incidents; upward trend in number of incidents will trigger management actions

In 2012, the Missoula Ranger District supported the Leave No Weeds program in partnership with the Missoula County Weed District. The program was developed by the Lolo National Forest and, since 2001, has been coordinated and presented by Missoula County Weed District staff. The Leave No Weeds education program is targeted toward 5th grade students. The classroom presentations define what noxious weeds are and how to identify them. Impacts from weeds to the environment along with management techniques and prevention are also taught. The students then participate in an outdoor field trip in a local wild-land setting where they pull weeds, take a plant identification hike, and record what they learned in a journal (Refer to Table 2).

The University of Montana's Campus Recreation Program also conducted two Leave No Trace education courses in 2012(refer to Table 3).

Table 2 Education – Leave No Weeds Presentation, Spring 2012

Teacher	School	Number of presentations	Number of kids
Haas, Blackman, Smith	Cold Springs	3	83
Moyer, Ramsey	Franklin	-	-
Pfau, Deschane, Fullbright	Chief Charlo	3	82
Schmill	Potomac	-	-
Jasperson	Lowell	1	24
Grant	DeSmet	1	18
Larson	Rattlesnake	3	75
Altmiller, Homer	Bonner School	2	32
Clouse, Ebelt	Target Range	2	58
Attard	Clark Fork School	-	-
Blaz	Lolo Elementary	3	95
Seeley	St. Joseph's	1	27
Burwich	Clinton School	1	25
O'Sullivan, Eustance, Bruse, Fry, Marques	Frenchtown	5	76
Cooper, Peterson, Ellis, Meyers, Bixby, Kattell	Hellgate Elementary	6	140
Reschke, Maddox	Paxon	2	60
Teresa Toller	Washington M.S.	1	250
-	Condon	2	12
-	Lewis and Clark	1	28
-	Nature Walk Week	4	206
Total			1291

Table 3 Education — Leave No Trace, Fall 2012

Permitted Program	Number of presentations	Total number of participants
UM Campus Recreation	2	20

Factor: Roads and Trails

Table 4 Indicators, Opportunity Classes and Standards for Roads and Trails

Indicator	Opportunity Class	Standard
Various: clearing width, tread width, maximum sustained grade, maximum sustained tread depth	1	No trails or roads; no new trails or trailheads
	2	Clearing 3'-4' wide, 8' high; tread width: 12"-18"; maximum sustained grade: 30% for no more than 300'; max. sustained tread depth: 4" for no more than 200'; new trails only for correction of resource damage or public safety and possible new access from Grant Creek or Marshall Canyon; no new trailheads
	3	Clearing width: 6'; tread width: 24"; max. sustained grade: 15%/500'; max. sustained tread depth: 4"/200'; road clearing may require extra width for drainage (ditch maintenance); smoothness of tread/removal of obstacles may differ between classes 4 & 5; new trails only for resource protection and public safety; no new trailheads
	4 & 5	Clearing width: 8' wide by 10' high for trails and roads; tread width 24"; max. sustained grade 15 % for no more than 200'; max. sustained tread depth: 4"/200'; road clearing may require extra width for drainage (ditch maintenance); smoothness of tread / removal of obstacles may differ between classes 4 & 5; new trails only for resource protection and public safety; no new trailheads
	6	Road as currently exists; no paving beyond parking area; new trails or trailheads for resource protection, public safety and dispersal of use

Table 5 Miles of Trail Work Accomplished

Type of Trail Work	Trail #'s	Miles of Trail
Trails Opened	All	81.6
Trails constructed/relocated	-	-
Drainage improvements/maintenance	-	-
Total:		81.6

Mountain Bike Ranger Trail Patrols

The Missoula Ranger District was unable to employ a Mountain Bike Ranger in 2012 due to a lack of funding. When the position is filled, the Missoula Ranger District's Mountain Bike Ranger patrols and monitors system and non-system trails in the NRA. A Mountain Bike Ranger was previously employed during the summer field season consecutively from 2002 through 2011. 2011 and previous years data has been retained in the 2012 LAC report to serve as documentation of work accomplishments in the past and for future use by managers and Rangers.

General patrol duties included:

- Visitor contacts and education

- Forest Protection Officer law enforcement
- Providing an agency presence
- Reconnaissance of resource conditions and developing solutions
- Sign and minor trail work

Specific duties included:

- Signing the existing trail system to match the trail map in a manner that allows users, especially bike riders, to navigate trail junctions quickly
- Documenting inconsistencies between the trail map and existing conditions
- Patrolling for resource issues and violations
- Monitoring "non-system" trails for use, constructed features, and resource damage
- Naturalization and obliteration of user created trails

Visitor Reaction: Many of the visitors that the Mountain Bike Ranger encountered on the trails were "surprised" to see Forest Service (FS) patrol presence in the NRA. Bikers, hikers, and horse riders seemed pleased that agency personnel were patrolling by bike.

Table 6 Mountain Bike Ranger Trail Travel Log 2011

Trails Traveled	24.0, 24.1*, 24.2, 24.3, 24.4, 24.5, 24.6, 24.7, 24.8, 28.1, 28.2, 28.3, 517*, 517.1, 29.1, 29.2, 515*, 515.1, 515.2, 515.3, 515.4, 515.5, 515.6, 515.7, 515.8, 513*, 513.1, 513.2, 326, 326.1
Trails Not Traveled	34, 514

* Trails not traveled in their entirety.

Signs: The NRA was generally well signed and maintained prior to the 2012 field season. No sign work was completed in 2012. In 2011, some repetitive trail markers were removed and the remaining signs were maintained by replacing markers, darkening numbers, and adding "TR#" as needed.

Other work accomplished in the NRA included:

- Trail clearing
- Updating Special Orders and trailhead information boards
- Loosening nails and bolts on trail and junction markers mounted on trees
- Removing illegally created structures created for freestyle mountain bike riding
- Monitoring and naturalizing the user created "Mule Trails" (non-system) located in Sawmill Gulch

Table 7 Sign /Work Accomplished 2011 (No sign work completed in 2012)

Sign or work	Location	Status	Prescription	Notes
TR #515.1 Marker	TR #515.3 Int.	Replaced	Maintain	
TR #515.6 Marker	TR #515.5 Int.	Replaced	Maintain	
TR #515.4 Marker		Replaced	Maintain	
Abandoned Property	TR #29.2 / Transient Sites	Removed	Monitor Area for Use	N 46°57'05" W 113°56'18"
TR #517.1	Jct. I	Replaced	Maintain	
TR #29.1		Replaced	Maintain	
Rock Fire Ring	TR #24.1	Naturalized	Monitor	N 46°56'06" W 113°58'28"
TR #513	Jct. W	Installed	Maintain	
No Bicycles symbol	Mule Trails/Old Road Int.	Removed		N 46°56'05" W 113°55'56"
TR #326	Jct. X	Replaced	Maintain	
TR #326.1	Jct. X	Replaced	Maintain	
Wood Placard	Jct. X	Replaced	Maintain	
TR #326	FS Boundary	Installed	Maintain	

Sign or work	Location	Status	Prescription	Notes
TR #326	User Int.	Installed	Maintain	
TR #326	User Int.	Installed	Maintain	
Tree	TR #24.2 at Jct. A	Removed from trail		
Tree	TR #513.1	Removed from trail		
Tree	TR #513.1	Removed from trail		
Tree	TR #513.1	Removed from trail		
TR #326	End of trail	Installed	Maintain	
TR #326.1	End of trail	Replaced	Maintain	
TR #326.1	End of trail	Installed	Maintain	
South Zone Boundary	TR #513	Intact	Monitor	N 46°56'26" W 113°53'43"
Tree	TR #513	Removed from trail		
TR #513	User Int.	Installed	Maintain	
TR #513	User Int.	Installed	Maintain	
Rock Fire Ring	TR #513	Naturalized		
Attractant Storage	Main TH Information Board	Replaced	Maintain	
Misc. Signs	Woods Gulch TH Information Board	Rearranged	Maintain	Information Board needs replaced
Attractant Storage	Woods Gulch TH Information Board	Installed	Maintain	
Trail Map	Woods Gulch TH Information Board	Replaced	Maintain	
Bear Identification	Woods Gulch TH Information Board	Removed		
Hunter Notice	Woods Gulch TH Information Board	Removed		
TR #24.2		Replaced	Maintain	
Mountain Lion Warning	Main TH Information Board	Installed	Maintain	
Mountain Lion Warning	Horse TH Information Board	Installed	Maintain	
TR #24.2	Sawmill Gulch TH	Removed		Was located on a tree
TR #24.2	Sawmill Gulch TH	Installed	Maintain	Used 4x4x8 post
2 Way	Sawmill Gulch TH	Installed	Maintain	On same post as TR #24.2
2 Way	Rattlesnake Main TH	Installed	Maintain	Located on u-post with No Dogs symbol
Tree	TR #515	Removed from trail		
Jct. A / TR #24.2	Jct. A	Relocated	Maintain	Removed 4x4x8 / Added signs to existing post with No Dogs symbol
2 Way	Jct. A	Installed	Maintain	Installed on post with Jct. A, TR #24.2, and No Dogs symbol
Abandoned Property	TR #29.1 / Transient Knob	Removed	Monitor Area for Use	Small amount of trash still on site
Junction Markers	RNRA Trail System	Loosened Lags	Maintain	3 times this maintenance was performed
Trail Markers	RNRA Trail System	Added "TR", Darkened Numbers, Loosened/Replaced Nails	Maintain	102 times a listed maintenance was provided
Total Signs Maintained	**144**			

User Created / Non-system Trails: There are multiple user created trails located in the NRA. Most of the user trails have been barricaded with woody debris and naturalized to deter use. In 2013, user created trails naturalized in 2009-2011 should be monitored to determine the effectiveness of the closures.

An area of particular concern in 2011 was the user created trail system in Marshall Canyon called "Meow Mix." This area was patrolled by the Mountain Bike Ranger in August of 2011 and appeared to have no use. However, this trail system was closed and reopened four times in 2010. Monitoring was not completed in 2012. The "Meow Mix" area should continue to be monitored for illegal use in 2013.

Table 8 User Trail Development

Development	Location	Status	*Prescriptions
User Trail	TR #24.7	Naturalized 20'	Monitor for Use
User Trail (GPS Tracked)	Mule Trails	Naturalized Various Locations: Total approx 300'	Monitor
User Trail (GPS Tracked)	End of TR #326 (to the right)	Open	Monitor
User Trail (GPS Tracked)	End of TR #326 (to the left)	Open	Monitor
User Trail	TR #24.7 & TR #24.6 Int.	Open	Monitor
User Trail	TR #24.6	Naturalized	Monitor
User Trail	TR #24.6	Naturalized	Monitor
User Trail	TR #24.0	Grown over	Monitor
User Trail	TR #24.4	Grown over	Monitor
User Trail	TR #24.4	Grown over	Monitor
User Trail	TR #24.5	Grown over/ Naturalized	Monitor
User Trail	TR #24.3	Grown over/ Naturalized	Monitor
User Trail	TR #24.1	Grown over/ Naturalized	Monitor
User Trail	TR #24.1	Grown over/ Naturalized	Monitor
User Trail	Meow Mix		Monitor

*Reference the Rattlesnake System/Non System Trail Map for prescriptions.

Factor: Use And Users

Table 9 Indicators, Opportunity Classes and Standards

Indicator	Opportunity Class	Standard
Group Size	1-5	10 persons per party
	6	50 persons per party
Trail encounters	1	1 group per day
	2	3 groups per day
	3	10 groups per day
	4	5 groups per day
	5	10 groups per day
	6	20 groups per day
Campsite encounters	1	0 groups per night
	2	1 group per night
	3	2 groups per night
	4	1 group per night
	5	2 groups per night
	6	No overnight camping
Campsite density	1	No increase in existing number of campsites
	2 & 3	No more than three sites at each of the lakes. Other areas: no more than three per mile or no increase over existing situation
	4 & 5	Strive for visual and auditory separation, but no more than 3 per mile or no increase over existing situation
	6	0 – no overnight camping
Campsite condition	1	Evidence of camping not to persist from year to year
	2 & 3	None worse than moderate

	4 & 5	Not more than one (of the 3 per mile) to be heavy; no extreme
	6	Day use sites. No more than one heavy, two moderate per mile
Reports of user conflict	all	No standard; will monitor number of incidents; upward trend in incidents will trigger management actions

The Missoula Nordic Ski Club (MNSC) collects NRA trail encounter information along Rd. 99 during the cross-country ski season only during grooming operations. The MNSC monitored the total number of groups and people encountered per day in each Opportunity Class (*Standards are for group size and # of trail encounters/day). Due to weather and equipment difficulties, January 21, 2012 was the only weekend that grooming and monitoring occurred during the winter of 2011-2012.

Table 10 Nordic Ski Club Trail/Rd. 99 Encounters

DATE	OC#	AVG. GROUP SIZE	TOTAL PEOPLE PER OC	SKI GROUPS	HIKE GROUPS	RUN GROUPS	BIKE GROUPS	HORSE GROUPS	GROUPS/ OC	STANDARDS MET?*
1/21/12	6	3	26	8	1	0	0	0	20	GS=Y, TE=Y
1/21/12	5	2.5	25	10	0	0	0	0	20	GS=Y, TE=Y
Total	-	-	51	18	1	0	0	0	-	GS=Y, TE=Y

NRA Trail Encounters: Rangers collected NRA trail encounter information while on patrol. Only encounters beyond the 3 mile marker were recorded prior to 2010. Beginning in 2010, visitors in the first three miles were also included in the encounter monitoring. Encounters were monitored from April 2012 to November 2012. No group size or trail encounters were out of standard in 2012.

Table 11 2012 Ranger Trail Encounters (NRA)

Date	NRA Location	OC#	Party Type	Party Size	Type And # Of Animals	Trip Length	Groups /OC	Standards Met?*
4/30/12	Rd. 99	5	Bike	1	-	Day	10	GS=Y, TE=Y
4/30/12	Rd.99	5	Run	1	-	Day	10	GS=Y, TE=Y
4/30/12	Rd.99	6	Hike	1	-	Day	20	GS=Y, TE=Y
6/9/12	Tr. 333	Na	Hike	2	1 Dog	Day	-	-
6/29/12	Rd. 99	6	Bike	1	-	Day	20	GS=Y, TE=Y
6/29/12	Rd. 99	6	Run	1	-	Day	20	GS=Y, TE=Y
6/29/12	Rd. 99	6	Hike	1	-	Day	20	GS=Y, TE=Y
6/29/12	Rd. 99	6	Hike	2	-	Day	20	GS=Y, TE=Y
6/29/12	Rd. 99	6	Hike	2	-	Day	20	GS=Y, TE=Y
6/29/12	Rd. 99	6	Bike	1	-	Day	20	GS=Y, TE=Y
6/29/12	Rd. 99	5	Hike	1	-	Day	10	GS=Y, TE=Y
6/29/12	Rd. 99	5	Hike	1	1 Dog	Day	10	GS=Y, TE=Y
6/29/12	Rd. 99	5	Run	1	-	Day	10	GS=Y, TE=Y
6/29/12	Rd. 99	5	Bike	2	-	Day	10	GS=Y, TE=Y
6/29/12	Rd. 99	5	Bike	1	-	Day	10	GS=Y, TE=Y
6/29/12	Rd. 99	5	Hike	2	3 Dogs	Day	10	GS=Y, TE=Y
6/29/12	Rd. 99	5	Bike	1	-	Day	10	GS=Y, TE=Y
6/29/12	Rd. 99	5	Hike	2	-	Day	10	GS=Y, TE=Y
7/1/12	Tr. 333	NA	Fish	2	1 Dog	Day	NA	NA
7/2/12	Rd. 99	5	Bike	1	-	Day	10	GS=Y, TE=Y
7/2/12	Rd. 99	5	Hike	1	-	Day	10	GS=Y, TE=Y
7/2/12	Rd. 99	5	Hike	2	-	Day	10	GS=Y, TE=Y
7/2/12	Rd. 99	5	Run	1	-	Day	10	GS=Y, TE=Y
7/2/12	Rd. 99	5	Run	2	1 Dog	Day	10	GS=Y, TE=Y
7/2/12	Rd. 99	5	Bike	1	-	Day	10	GS=Y, TE=Y
7/2/12	Rd. 99	5	Hike	3	-	Day	10	GS=Y, TE=Y
7/2/12	Rd. 99	6	Bike	1	-	Day	20	GS=Y, TE=Y
7/2/12	Rd. 99	6	Run	2	1 Dog	Day	20	GS=Y, TE=Y
7/2/12	Rd. 99	6	Hike	1	-	Day	20	GS=Y, TE=Y
7/2/12	Rd. 99	6	Hike	1	1 Dog	Day	20	GS=Y, TE=Y
7/2/12	Rd. 99	6	Hike	7	-	Day	10	GS=Y, TE=Y
7/6/12	Rd. 99	6	Hike	8	-	Day	20	GS=Y, TE=Y
7/6/12	Rd. 99	6	Bike	2	-	Day	20	GS=Y, TE=Y
7/6/12	Rd. 99	6	Hike	1	-	Day	20	GS=Y, TE=Y
7/6/12	Rd. 99	6	Bike	4	-	Day	20	GS=Y, TE=Y

Date	NRA Location	OC#	Party Type	Party Size	Type And # Of Animals	Trip Length	Groups /OC	Standards Met?*
7/6/12	Rd. 99	6	Run	1	-	Day	20	GS=Y, TE=Y
7/6/12	Rd. 99	6	Hike	2	1 dog	Day	20	GS=Y, TE=Y
7/6/12	Rd. 99	6	Run	1	-	Day	20	GS=Y, TE=Y
7/6/12	Rd. 99	5	Hike	2	-	Day	10	GS=Y, TE=Y
7/6/12	Rd. 99	5	Hike	1	-	Day	10	GS=Y, TE=Y
7/8/12	Rd. 99	4	Bike/Fish	2	-	Day	5	GS=Y, TE=Y
7/8/12	Rd. 99	5	Bike	2	-	Day	10	GS=Y, TE=Y
7/8/12	Rd. 99	5	Bike	1	-	Day	10	GS=Y, TE=Y
7/8/12	Rd. 99	5	Bike	7	1 dog	Day	10	GS=Y, TE=Y
7/8/12	Rd. 99	5	Bike	1	1 dog	Day	10	GS=Y, TE=Y
7/8/12	Rd. 99	5	Bike/Fish	1	-	Day	10	GS=Y, TE=Y
7/8/12	Rd. 99	5	Bike	4	-	Day	10	GS=Y, TE=Y
7/8/12	Rd. 99	5	Bike	2	-	Day	10	GS=Y, TE=Y
7/8/12	Rd. 99	5	Bike	2	-	Day	10	GS=Y, TE=Y
7/8/12	Rd. 99	5	Bike	1	-	Day	10	GS=Y, TE=Y
7/8/12	Rd. 99	5	Bike	4	-	Day	10	GS=Y, TE=Y
7/8/12	Rd. 99	5	Bike	1	-	Day	10	GS=Y, TE=Y
7/8/12	Rd. 99	5	Run	2	-	Day	10	GS=Y, TE=Y
7/8/12	Rd. 99	5	Hike	2	2 dogs	Day	10	GS=Y, TE=Y
7/8/12	Rd. 99	6	Hike	2	-	Day	20	GS=Y, TE=Y
7/8/12	Rd. 99	6	Hike	1	-	Day	20	GS=Y, TE=Y
7/8/12	Rd. 99	6	Hike	2	-	Day	20	GS=Y, TE=Y
7/8/12	Rd. 99	6	Bike	1	-	Day	20	GS=Y, TE=Y
7/28/12	Rd. 99	6	Hike	2	-	Day	20	GS=Y, TE=Y
7/28/12	Rd. 99	6	Bike	1	-	Day	20	GS=Y, TE=Y
7/28/12	Rd. 99	5	Bike	2	-	Day	10	GS=Y, TE=Y
7/28/12	Rd. 99	5	Run	2	1 dog	Day	10	GS=Y, TE=Y
7/28/12	Rd. 99	5	Run	2	-	Day	10	GS=Y, TE=Y
7/28/12	Rd. 99	5	Run	2	-	Day	10	GS=Y, TE=Y
7/28/12	Rd. 99	5	Run	3	-	Day	10	GS=Y, TE=Y
7/28/12	Rd. 99	5	Run	3	-	Day	10	GS=Y, TE=Y
7/29/12	Rd. 99	4	Bike	1	-	1 night	5	GS=Y, TE=Y
7/29/12	Rd. 99	4	Bike	1	-	Day	5	GS=Y, TE=Y
7/29/12	Rd. 99	5	Hike	2	-	Day	10	GS=Y, TE=Y
7/29/12	Rd. 99	5	Bike	1	-	Day	10	GS=Y, TE=Y
7/29/12	Rd. 99	5	Run	1	-	Day	10	GS=Y, TE=Y
7/29/12	Rd. 99	5	Hike	3	-	Day	10	GS=Y, TE=Y
7/29/12	Rd. 99	5	Bike/Fish	1	-	Day	10	GS=Y, TE=Y
7/29/12	Rd. 99	5	Run	1	-	Day	10	GS=Y, TE=Y
7/29/12	Rd. 99	5	Hike	2	-	Day	10	GS=Y, TE=Y
7/29/12	Rd. 99	5	Hike	1	1 dog	Day	10	GS=Y, TE=Y
7/29/12	Rd. 99	5	Hike	5	1 dog	Day	10	GS=Y, TE=Y
7/29/12	Rd. 99	5	Hike	4	-	Day	10	GS=Y, TE=Y
7/29/12	Rd. 99	5	Hike	2	2 dogs	Day	10	GS=Y, TE=Y
7/29/12	Rd. 99	6	Hike	2	1 dog	Day	20	GS=Y, TE=Y
7/29/12	Rd. 99	6	Hike	7	1 dog	Day	20	GS=Y, TE=Y
7/29/12	Rd. 99	6	Hike	2	1 dog	Day	20	GS=Y, TE=Y
7/29/12	Rd. 99	6	Bike	2	-	Day	20	GS=Y, TE=Y
7/29/12	Rd. 99	6	Hike	5	1 dog	Day	20	GS=Y, TE=Y
7/29/12	Rd. 99	6	Hike	3	-	Day	20	GS=Y, TE=Y
7/29/12	Rd. 99	6	Hike	2	-	Day	20	GS=Y, TE=Y
8/10/12	Rd. 99	6	Hike	4	1 dog	Day	20	GS=Y, TE=Y
8/10/12	Rd. 99	6	Hike	2	1 dog	Day	20	GS=Y, TE=Y
8/10/12	Rd. 99	6	Run	1	-	Day	20	GS=Y, TE=Y
8/10/12	Rd. 99	6	Hike	1	-	Day	20	GS=Y, TE=Y
8/10/12	Rd. 99	5	Hike	2	-	Day	10	GS=Y, TE=Y
8/10/12	Rd. 99	5	Bike	2	-	Day	10	GS=Y, TE=Y
8/10/12	Rd. 99	4	Bike	1	-	Day	5	GS=Y, TE=Y
8/13/12	Rd. 99	4	Bike/fish	2	-	Day	5	GS=Y, TE=Y
8/13/12	Rd. 99	5	Hike	2	-	Day	10	GS=Y, TE=Y
8/13/12	Rd. 99	5	Run	1	-	Day	10	GS=Y, TE=Y
8/13/12	Rd. 99	6	Hike	4	3 dogs	Day	20	GS=Y, TE=Y
8/13/12	Rd. 99	6	Hike	2	1 dog	Day	20	GS=Y, TE=Y
8/13/12	Rd. 99	6	Bike	1	-	Day	20	GS=Y, TE=Y
8/13/12	Rd. 99	6	Hike	6	-	Day	20	GS=Y, TE=Y
8/13/12	Rd. 99	6	Hike	5	1 dog	Day	20	GS=Y, TE=Y
8/13/12	Rd. 99	6	Hike	1	1 dog	Day	20	GS=Y, TE=Y
8/24/12	Rd. 99	6	Hike	2	1 dog	Day	20	TE=Y, GS=Y
8/24/12	Rd. 99	6	Hike	2	-	Day	20	TE=Y, GS=Y

Date	NRA Location	OC#	Party Type	Party Size	Type And # Of Animals	Trip Length	Groups /OC	Standards Met?*
8/24/12	Rd. 99	6	Bike	2	-	Day	20	TE=Y, GS=Y
8/24/12	Rd. 99	6	Bike	1	1 dog	Day	20	TE=Y, GS=Y
8/24/12	Rd. 99	6	Hike	5	1 dog	Day	20	TE=Y, GS=Y
8/24/12	Rd. 99	6	Hike	2	-	Day	20	TE=Y, GS=Y
8/24/12	Rd. 99	6	Bike	4	-	Day	20	TE=Y, GS=Y
8/24/12	Rd. 99	6	Hike	6	-	Day	20	TE=Y, GS=Y
8/24/12	Rd. 99	5	Bike	1	-	Day	10	TE=Y, GS=Y
8/24/12	Rd. 99	5	Bike	1	-	Day	10	TE=Y, GS=Y
8/24/12	Rd. 99	5	Bike/fish	2	-	Day	10	TE=Y, GS=Y
8/24/12	Rd. 99	5	Hike	1	1 dog	Day	10	TE=Y, GS=Y
8/24/12	Rd. 99	4	Hike	4	-	Day	5	TE=Y, GS=Y
8/24/12	Rd. 99	4	Run	2	1 dog	Day	5	TE=Y, GS=Y
8/24/12	Rd. 99	4	Hike	2	1 dog	Day	5	TE=Y, GS=Y
8/26/12	Rd. 99	4	Bike	6	-	Day	5	TE=Y, GS=Y
8/26/12	Rd. 99	4	Bike	1	-	Day	5	TE=Y, GS=Y
8/26/12	Rd. 99	4	Bike	1	-	Day	5	TE=Y, GS=Y
8/26/12	Rd. 99	4	Bike	2	-	Day	5	TE=Y, GS=Y
8/26/12	Rd. 99	5	Hike	2	1 dog	Day	10	TE=Y, GS=Y
8/26/12	Rd. 99	5	Bike	2	1 dog	Day	10	TE=Y, GS=Y
8/26/12	Rd. 99	5	Run	1	-	Day	10	TE=Y, GS=Y
8/26/12	Rd. 99	5	Run	2	-	Day	10	TE=Y, GS=Y
8/26/12	Rd. 99	5	Run	4	-	Day	10	TE=Y, GS=Y
8/26/12	Rd. 99	5	Hike	2	2 dogs	Day	10	TE=Y, GS=Y
8/26/12	Rd. 99	5	Hike	2	1 dog	Day	10	TE=Y, GS=Y
8/24/12	Rd. 99	6	Hike	6	1 dog	Day	20	TE=Y, GS=Y
8/24/12	Rd. 99	6	Bike	1	1 dog	Day	20	TE=Y, GS=Y
8/24/12	Rd. 99	6	Hike	5	-	Day	20	TE=Y, GS=Y
8/24/12	Rd. 99	6	Bike	2	-	Day	20	TE=Y, GS=Y
8/24/12	Rd. 99	6	Hike	3	-	Day	20	TE=Y, GS=Y
8/24/12	Rd. 99	6	Hike	2	1 dog	Day	20	TE=Y, GS=Y
9/2/12	Rd. 99	4	Hike	6	2 dogs	2 nights	5	TE=Y, GS=Y
9/2/12	Rd. 99	6	Hike	2	2 dogs	Day	20	TE=Y, GS=Y
9/2/12	Rd. 99	6	Bike	2	-	Day	20	TE=Y, GS=Y
9/2/12	Rd. 99	6	Hike	2	-	Day	20	TE=Y, GS=Y
9/2/12	Rd. 99	6	Hike	1	2 dogs	Day	20	TE=Y, GS=Y
9/2/12	Rd. 99	6	Hike	6	-	Day	20	TE=Y, GS=Y
9/2/12	Rd. 99	6	Bike	4	-	Day	20	TE=Y, GS=Y
9/2/12	Rd. 99	5	Hike	2	2 dogs	Day	10	TE=Y, GS=Y
9/2/12	Rd. 99	5	Bike	2	-	Day	10	TE=Y, GS=Y
9/2/12	Rd. 99	5	Bike/Fish	2	-	Day	10	TE=Y, GS=Y
9/2/12	Rd. 99	5	Hike	4	-	Day	10	TE=Y, GS=Y
9/2/12	Rd. 99	5	Run	2	-	Day	10	TE=Y, GS=Y
9/2/12	Rd. 99	5	Hike	2	1 dog	Day	10	TE=Y, GS=Y
9/2/12	Rd. 99	5	Run	2	-	Day	10	TE=Y, GS=Y
9/2/12	Rd. 99	5	Bike	2	-	Day	10	TE=Y, GS=Y
9/2/12	Rd. 99	5	Bike/Fish	2	-	Day	10	TE=Y, GS=Y
9/2/12	Rd. 99	4	Bike	1	-	Day	5	TE=Y, GS=Y
9/2/12	Rd. 99	4	Bike	2	-	Day	5	TE=Y, GS=Y
9/8/12	Rd. 99	6	Hike	1	-	2 nights	20	GS=Y, TE=Y
9/8/12	Rd. 99	6	Run	3	-	Day	20	GS=Y, TE=Y
9/8/12	Rd. 99	6	Bike	2	-	Day	20	GS=Y, TE=Y
9/8/12	Rd. 99	6	Hike	2	1 dog	Day	20	GS=Y, TE=Y
9/8/12	Rd. 99	6	Bike	2	2 dogs	Day	20	GS=Y, TE=Y
9/8/12	Rd. 99	5	Run	2	1 dog	Day	10	GS=Y, TE=Y
9/8/12	Rd. 99	5	Bike	2	1 dog	Day	10	GS=Y, TE=Y
9/8/12	Rd. 99	5	Bike/fish	1	-	Day	10	GS=Y, TE=Y
9/8/12	Rd. 99	5	Run	2	-	Day	10	GS=Y, TE=Y
9/8/12	Rd. 99	5	Hike	2	-	Day	10	GS=Y, TE=Y
9/8/12	Rd. 99	5	Bike	1	-	Day	10	GS=Y, TE=Y
9/8/12	Rd. 99	5	Bike	6	-	Day	10	GS=Y, TE=Y
9/8/12	Rd. 99	5	Run	2	-	Day	10	GS=Y, TE=Y
9/8/12	Rd. 99	5	Hike	2	-	Day	10	GS=Y, TE=Y
9/8/12	Rd. 99	6	Bike	2	-	Day	20	GS=Y, TE=Y
9/8/12	Rd. 99	6	Hike	2	1 dogs	Day	20	GS=Y, TE=Y
9/8/12	Rd. 99	6	Hike	1	-	Day	20	GS=Y, TE=Y
9/8/12	Rd. 99	6	Bike	2	-	Day	20	GS=Y, TE=Y
9/8/12	Rd. 99	6	Hike	3	-	Day	20	GS=Y, TE=Y
9/8/12	Rd. 99	6	Bike	2	-	Day	20	GS=Y, TE=Y
9/8/12	Rd. 99	6	Bike	2	2 dogs	Day	20	GS=Y, TE=Y

Date	NRA Location	OC#	Party Type	Party Size	Type And # Of Animals	Trip Length	Groups /OC	Standards Met?*
9/8/12	Rd. 99	6	Hike	2	2 dogs	Day	20	GS=Y, TE=Y
9/14/12	Rd. 99	6	UM Class	13	-	Day	20	GS=Y, TE=Y
9/14/12	Rd. 99	6	Hike	3	-	Day	20	GS=Y, TE=Y
9/14/12	Rd. 99	6	Hike	1	-	Day	20	GS=Y, TE=Y
9/14/12	Rd. 99	6	Hike	1	2 dogs	Day	20	GS=Y, TE=Y
9/14/12	Rd. 99	6	Hike	1	-	Day	20	GS=Y, TE=Y
9/14/12	Rd. 99	6	Hike	2	-	Day	20	GS=Y, TE=Y
9/14/12	Rd. 99	6	Bike	2	-	Day	20	GS=Y, TE=Y
9/14/12	Rd. 99	6	Hike	1	-	Day	20	GS=Y, TE=Y
9/21/12	Rd. 99	6	Hike	2	-	Day	20	GS=Y, TE=Y
9/21/12	Rd. 99	6	Hike	1	-	Day	20	GS=Y, TE=Y
9/21/12	Rd. 99	6	Hike	2	1 Dog	Day	20	GS=Y, TE=Y
9/21/12	Rd. 99	6	Bike	2	-	Day	20	GS=Y, TE=Y
9/21/12	Rd. 99	5	Hike	1	-	Day	10	GS=Y, TE=Y
9/21/12	Rd. 99	5	Bike	1	-	Day	10	GS=Y, TE=Y
9/22/12	Rd. 99	5	Horse	1	1 Horse	Day	5	GS=Y, TE=Y
9/21/12	Rd. 99	5	Bike/Hunt	2	-	2 Nights	10	GS=Y, TE=Y
9/22/12	Rd. 99	4	Bike	1	-	Day	5	GS=Y, TE=Y
9/22/12	Rd. 99	5	Bike	3	-	Day	10	GS=Y, TE=Y
9/22/12	Rd. 99	5	Bike	2	-	Day	10	GS=Y, TE=Y
9/22/12	Rd. 99	5	Bike	1	-	Day	10	GS=Y, TE=Y
9/22/12	Rd. 99	5	Hike	1	-	Day	10	GS=Y, TE=Y
9/22/12	Rd. 99	5	Hike	2	2 Dogs	Day	10	GS=Y, TE=Y
9/22/12	Rd. 99	5	Bike	1	-	Day	10	GS=Y, TE=Y
9/22/12	Rd. 99	6	Bike	1	-	Day	20	GS=Y, TE=Y
9/22/12	Rd. 99	6	Hike	2	-	Day	20	GS=Y, TE=Y
9/22/12	Rd. 99	6	Hike	2	1 Dog	Day	20	GS=Y, TE=Y
9/30/12	Rd. 99	4	Bike	4	-	Day	5	GS=Y, TE=Y
9/30/12	Rd. 99	4	Bike	2	-	Day	5	GS=Y, TE=Y
9/30/12	Rd. 99	4	Bike	1	-	Day	5	GS=Y, TE=Y
9/30/12	Rd. 99	5	Bike	4	-	Day	10	GS=Y, TE=Y
9/30/12	Rd. 99	5	Bike	2	-	Day	10	GS=Y, TE=Y
9/30/12	Rd. 99	5	Bike	1	-	Day	10	GS=Y, TE=Y
9/30/12	Rd. 99	5	Bike	3	-	Day	10	GS=Y, TE=Y
9/30/12	Rd. 99	5	Bike	6	-	Day	10	GS=Y, TE=Y
9/30/12	Rd. 99	5	Bike	5	-	Day	10	GS=Y, TE=Y
9/30/12	Rd. 99	5	Hike	2	1 Dog	Day	10	GS=Y, TE=Y
9/30/12	Rd. 99	5	Bike	1	-	Day	10	GS=Y, TE=Y
9/30/12	Rd. 99	5	Bike	2	-	Day	10	GS=Y, TE=Y
9/30/12	Rd. 99	5	Hike	1	-	Day	10	GS=Y, TE=N
9/30/12	Rd. 99	5	Bike	2	-	Day	10	GS=Y, TE=N
9/30/12	Rd. 99	5	Bike	3	1 Dog	Day	10	GS=Y, TE=N
9/30/12	Rd. 99	5	Bike	4	-	Day	10	GS=Y, TE=N
9/30/12	Rd. 99	5	Hike	2	-	Day	10	GS=Y, TE=N
9/30/12	Rd. 99	5	Bike	5	-	Day	10	GS=Y, TE=N
9/30/12	Rd. 99	5	Hike	2	-	Day	10	GS=Y, TE=N
9/30/12	Rd. 99	6	Hike	3	-	Day	20	GS=Y, TE=Y
9/30/12	Rd. 99	6	Bike	1	-	Day	20	GS=Y, TE=Y
9/30/12	Rd. 99	6	Bike	2	-	Day	20	GS=Y, TE=Y
9/30/12	Rd. 99	6	Hike	3	-	Day	20	GS=Y, TE=Y
9/30/12	Rd. 99	6	Hike	5	-	Day	20	GS=Y, TE=Y
9/30/12	Rd. 99	6	Bike	2	-	Day	20	GS=Y, TE=Y
9/30/12	Rd. 99	6	Hike	3	1 Dog	Day	20	GS=Y, TE=Y
9/30/12	Rd. 99	6	Hike	1	2 Dogs	Day	20	GS=Y, TE=Y
9/30/12	Rd. 99	6	Hike	2	2 Dogs	Day	20	GS=Y, TE=Y
9/30/12	Rd. 99	6	Hike	3	3 Dogs	Day	20	GS=Y, TE=Y
9/30/12	Rd. 99	6	Hike	2	-	Day	20	GS=Y, TE=Y
9/30/12	Rd. 99	6	Bike	1	-	Day	20	GS=Y, TE=Y
9/30/12	Rd. 99	6	Hike	2	-	Day	20	GS=Y, TE=Y
9/30/12	Rd. 99	6	Hike	4	-	Day	20	GS=Y, TE=Y
9/30/12	Rd. 99	6	Hike	4	-	Day	20	GS=Y, TE=Y
9/30/12	Rd. 99	6	Hike	2	1 Dog	Day	20	GS=Y, TE=Y
10/12/12	Rd. 99	6	Hike	1	-	1 Night	20	GS=Y, TE=Y
10/12/12	Rd. 99	6	Hike	3	-	Day	20	GS=Y, TE=Y
10/12/12	Rd. 99	5	Bike	2	-	Day	10	GS=Y, TE=Y
10/12/12	Tr. 515.7	5	Run	1	-	Day	10	GS=Y, TE=Y
10/12/12	Rd. 99	5	Bike/Fish	1	-	Day	10	GS=Y, TE=Y
10/12/12	Rd. 99	5	Hike	2	-	Day	10	GS=Y, TE=Y
10/12/12	Rd. 99	5	Run	3	-	Day	10	GS=Y, TE=Y

Date	NRA Location	OC#	Party Type	Party Size	Type And # Of Animals	Trip Length	Groups /OC	Standards Met?*
10/12/12	Rd. 99	5	Bike	2	-	Day	10	GS=Y, TE=Y
10/13/12	Rd. 99	4	Bike/Hunt	2	-	2 Nights	5	GS=Y, TE=Y
10/13/12	Rd. 99	5	Run	1	-	Day	10	GS=Y, TE=Y
10/13/12	Rd. 99	5	Bike	2	-	Day	10	GS=Y, TE=Y
10/13/12	Rd. 99	5	Hike	1	-	Day	10	GS=Y, TE=Y
10/13/12	Rd. 99	5	Run	1	-	Day	10	GS=Y, TE=Y
10/13/12	Rd. 99	6	Hike	1	1 Dog	Day	20	GS=Y, TE=Y
10/13/12	Rd. 99	6	Run	1	-	Day	20	GS=Y, TE=Y
10/13/12	Rd. 99	6	Hike	2	-	Day	20	GS=Y, TE=Y
10/13/12	Rd. 99	6	Hike	1	-	Day	20	GS=Y, TE=Y
10/19/12	Rd. 99	6	Hike	4	1 Dog	Day	20	GS=Y, TE=Y
10/19/12	Rd. 99	6	Hike	4	-	Day	20	GS=Y, TE=Y
10/19/12	Rd. 99	6	Hike	4	-	Day	20	GS=Y, TE=Y
10/19/12	Rd. 99	6	Bike	1	-	Day	20	GS=Y, TE=Y
10/19/12	Rd. 99	6	Hike	2	-	Day	10	GS=Y, TE=Y
10/21/12	Rd. 99	5	Run	1	-	Day	10	GS=Y, TE=Y
10/21/12	Rd. 99	5	Hike	2	1 Dog	Day	10	GS=Y, TE=Y
10/21/12	Rd. 99	5	Hike	2	-	Day	10	GS=Y, TE=Y
10/21/12	Rd. 99	5	Hike	2	1 Dog	Day	10	GS=Y, TE=Y
10/21/12	Rd. 99	5	Hike	6	-	Day	10	GS=Y, TE=Y
10/21/12	Rd. 99	5	Bike	2	-	Day	10	GS=Y, TE=Y
10/21/12	Rd. 99	5	Hike	2	-	Day	10	GS=Y, TE=Y
10/21/12	Rd. 99	6	Hike	2	-	Day	20	GS=Y, TE=Y
10/21/12	Rd. 99	6	Hike	1	-	Day	20	GS=Y, TE=Y
10/21/12	Rd. 99	6	Hike	2	2 Dogs	Day	20	GS=Y, TE=Y
10/21/12	Rd. 99	6	Hike	4	-	Day	20	GS=Y, TE=Y
10/21/12	Rd. 99	6	Hike	2	-	Day	20	GS=Y, TE=Y
10/21/12	Rd. 99	6	Hike	2	-	Day	20	GS=Y, TE=Y
10/21/12	Rd. 99	6	Hike	4	-	Day	20	GS=Y, TE=Y
10/21/12	Rd. 99	6	Bike	2	-	Day	20	GS=Y, TE=Y
10/21/12	Rd. 99	6	Hike	3	-	Day	20	GS=Y, TE=Y
10/21/12	Rd. 99	6	Hike	2	-	Day	20	GS=Y, TE=Y
10/21/12	Rd. 99	6	Hike	2	-	Day	20	GS=Y, TE=Y
10/21/12	Rd. 99	6	Bike	1	-	Day	20	GS=Y, TE=Y
11/3/12	Rd. 99	5	Bike	2	-	Day	10	GS=Y, TE=Y
11/3/12	Rd. 99	5	Hike	2	-	Day	10	GS=Y, TE=Y
11/3/12	Rd. 99	5	Hike	2	-	Day	10	GS=Y, TE=Y
11/3/12	Rd. 99	5	Bike	2	-	Day	10	GS=Y, TE=Y
11/3/12	Rd. 99	6	Hike	5	-	Day	20	GS=Y, TE=Y
11/3/12	Rd. 99	6	Hike	2	1 Dog	Day	20	GS=Y, TE=Y
11/3/12	Rd. 99	6	Hike	3	-	Day	20	GS=Y, TE=Y
11/3/12	Rd. 99	6	Hike	1	-	1 Night	20	GS=Y, TE=Y
11/3/12	Rd. 99	6	Bike	1	-	Day	20	GS=Y, TE=Y
11/3/12	Rd. 99	6	Hike	1	1 Dog	Day	20	GS=Y, TE=Y

GS=Group Size TE=Trail Encounters. *Standards are for group size and # of trail encounters/day.

Table 12 Ranger Day/Overnight Use Encounter Totals

NRA - Type of Use	Number of Groups				Number of People		
	Day Use	Overnight	Total	Day Use	Overnight	Total	% Use
Hike	62	2	64	346	4	348	56%
Run	34	0	34	55	0	55	9%
Horseback	1	0	1	1	0	1	.002
Bike	94	1	95	191	1	192	31%
Bike/Hunt	0	2	2	0	2	2	.003%
Bike/Fish	9	0	9	18	0	18	3%
Totals	**200**	**5**	**205**	**611**	**7**	**616**	**99.05%**

Table 13 Yearly User Trends - Ranger Encounter History

Type Of Use - NRA		Year											
	2012**	2011**	2010**	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000
Hike	348	141	180	11	15	11	16	24	34	25	59	137	112
Run	55	18	70	10	5	18	7	5	18	6	7	13	*
Bike	192	90	140	31	14	71	63	80	29	44	72	101	49
Horseback	1	6	3	0	2	2	1	0	9	1	8	1	1

Bike/Fish	18	5	*	1	4	1	4	*	*	*	*	*	*
Hike/Fish	0	2	*	1	0	1	0	*	*	*	*	*	*
Bike/Hike	0	0	*	0	0	6	3	*	*	*	*	*	*
Bike/Hunt	4	14	*	2	0	1	*	*	*	*	*	*	*
Hike/Hunt	0	0	2	0	0	1	*	*	*	*	*	*	*
TOTAL	**616**	**276**	**395**	**56**	**40**	**112**	**94**	**109**	**90**	**76**	**146**	**252**	**162**

*Indicates item not recorded

** 2010-2012 includes encounters before and beyond MP 3. Many factors contribute to the variance in trail encounters from year to year. Increases and decreases in trail encounters do not necessarily reflect an increasing or decreasing trend in use. Some variables which lead to fluctuations in user counts include: the time of day Rangers patrol, the day Rangers patrol (holiday/weekend), and the total amount of time allocated to patrol within the RNRAW which is based upon priorities across the District.

In 2011, the Mountain Bike Ranger collected NRA trail encounter information while patrolling the South Zone. 2011 encounters are shown below.

Table 14 Mountain Bike Ranger Trail Encounter Totals 2011

Year: 2011	Hike	Bike	Run	Horse	Backpack	Fish
Group Size						
1	98	162	63	0	2	2
2	116	98	12	1	6	3
3	36	21	3	0	0	0
4	19	8	0	0	2	0
5	5	3	1	1	0	0
6	9	0	0	0	0	0
7	2	0	0	0	0	0
8	0	0	0	0	0	0
9	1	1	0	0	0	0
10	2	0	0	0	0	0
Total # of groups	**288**	**293**	**79**	**2**	**10**	**5**
Total # of individuals	**636**	**477**	**101**	**7**	**22**	**8**
Total percent (individuals/total)	**50.8%**	**38.1%**	**8.1%**	**0.6%**	**1.8%**	**0.6%**
Total Contacts	**1251**					

Table 15 Mountain Bike Ranger Trail Encounter History (2011/2010/2009/2008/2007)

Mode of Travel	Number Of Groups	Individuals
Hike	288/80/265/133/14	615/180/563/78/31
Bike	293/71/245/115/5	449/140/420/269/8
Run	79/33/40/19/4	96/70/57/21/5
Horse	2/2/3/2/0	8/3/5/3/0
Dogs	121/41/97/NA/11	219/53/119/NA/16

*Many factors contribute to the variance in trail encounters from year to year. Increases and decreases in trail encounters do not necessarily reflect an increasing or decreasing trend in use. Some variables which lead to fluctuations in user counts include: the time of day Rangers patrol and the total amount of time allocated to patrol within the RNRAW which is based upon priorities across the District.

Table 16 was compiled using information recorded by the NRA Ranger who historically worked 15 hours per week (1998-2010, 5 days per week). Due to a lack of funding in 2011and 2012, the Missoula Ranger District was not able to staff the NRA Ranger. The NRA Ranger historically patrolled and maintained facilities in the South Zone of the NRA below mile marker 3. 2010 and previous years data has been retained in the 2012 LAC monitoring report to serve as documentation of work accomplishments and for future use by managers and Rangers

Table 16 Summary NRA Ranger Contacts below MP 3, Oct. – Dec. 2010

Group Size	Hike	Bike	Run	Horse	Backpack	Fish
1	24	37	23	1	0	1
2	34	23	5	1	1	0
3	8	4	0	0	0	0
4	10	2	1	0	0	0
5	1	1	0	0	0	0
6	2	0	1	0	0	0
7	1	2	0	0	0	0
8	0	1	1	0	0	0
9	0	0	1	0	0	0
10	0	1	1	0	0	0
Total # of groups	80	71	33	2	1	1
Total # of individuals	180	140	70	3	3	1
Total Percent	45.3%	35.2%	17.6%	0.8%	0.8%	0.3%

Table 17 Yearly User Trends – NRA Guard Contact History, Below MP 3

Type Of Use	Year												
	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000
Skier	N/A	N/A	N/A	424	71	0	506	272	540	85	603	488	1689
Hiker/Run	N/A	N/A	180	1380	1794	4712	4393	2333	4747	6077	4836	3648	3179
Biker	N/A	N/A	140	744	766	536	494	436	488	584	697	56	78
Horseback	N/A	N/A	3	25	54	32	27	8	35	32	102	0	113

*Many factors contribute to the variance in trail encounters from year to year. Increases and decreases in trail encounters do not necessarily reflect an increasing or decreasing trend in use. Some variables which lead to fluctuations in user counts include: the time of day Rangers patrol, and the total amount of time allocated to patrol within the NRA which varies each season based upon priorities across the District. For example, the significant decrease in contacts from 2009 to 2010 is not due to a decrease in public use, but rather, the Guard spent less time in the NRA. Also note: there was a reduction in time allocated to patrol in the NRA since 2008 due to funding constraints.

Campsites

Table 18 Campsite Indicator Opportunity Classes and Standards

Indicators	Opportunity Class	Standards
Campsite encounters	1	0 groups per night
	2	1 group per night
	3	2 groups per night
	4	1 group per night
	5	2 groups per night
	6	No overnight camping
Campsite density	1	No increase in existing number of campsites
	2 & 3	No more than three sites at each of the lakes. Other areas: no more than three per mile or no increase over existing situation
	4 & 5	Strive for visual and auditory separation, but no more than 3 per mile or no increase over existing situation
	6	0 – no overnight camping
Campsite condition	1	Evidence of camping not to persist from year to year
	2 & 3	None worse than moderate
	4 & 5	Not more than one (of the 3 per mile) to be heavy; no extreme
	6	Day use sites. No more than one heavy, two moderate per mile

Table 19 Campsite Encounters – NRA

Date	Location	OC#	Type Of Party	Party Size	Type And # Of Animals	Trip Length	Camp Encounters Per Night By OC	Standard Met?
6/30/12	Wz. Boundary Bridge	4	Bike	2	-	2 nights	1	GS=Y, CE=Y
7/8/12	Dalles	4	Hike/Bike	2	-	4 nights	1	GS=Y, CE=Y
8/24/12	Franklin Bridge	5	Hike	2	-	2 nights	3	GS=Y, CE=Y
9/2/12	Dalles	4	Bike/Hike	2	1 dog	2 nights	1	GS=Y, CE=N
9/2/12	Dalles	4	Hike	6	2 dogs	2 nights	1	GS=Y, CE=N
9/2/12	Franklin Bridge	5	Bike/Fish	2	-	1 night	2	GS=Y, CE=Y
9/2/12	Beeskove	5	Hike	4	-	1 night	2	GS=Y, CE=Y
9/14/12	Wz. Boundary Bridge	4	Bike Hunt	3	-	7 nights	2	GS=Y, CE=Y
9/21/12	Elk Meadows	4	Hunt	6	8 Horses and Wagon	4 Nights	1	GS=Y, CE=Y
9/30/12	Wz. Boundary Bridge	4	Bike/Hunt	2	-	1 Night	1	GS=Y, CE=N
9/30/12	Wz. Boundary Bridge	4	Bike/Hunt	2	-	3 Nights	1	GS=Y, CE=N
10/13/12	High Falls	4	Hunt	2	-	2	1	GS=Y, CE=Y
10/21/12	Franklin Bridge	5	Bike/Hunt	2	-	2 Nights	2	GS=Y, CE=Y

GS=Group Size; CE=Campsite Encounters

*Campsite Encounters for OC 4 were **out of standard** on the following dates: 9/2/12 (Labor Day Weekend), 9/30/12 (All parties were associated with the Early Season Elk Hunt.).

Condition standards in the 2012 monitoring report are based both on David Cole's 1983 rating index (to incorporate impact index weightings used on campsite inventory sheets) and the condition standards found on page 32 of the LAC Based Management Direction (Cole 1983). Campsite condition surveys in both the NRA and Wilderness are completed on a three year rotation.

In 2012, 12 of the 36 Rattlesnake National Recreation Area campsites were inventoried. Table 20 displays the rotation schedule to be used when completing campsite inventories in the NRA.

Table 20 Campsite Inventory Rotation

NRA Campsites	Year
99-1—99-12	2012
99-13—99-24	2013
99-25—99-36	2014
99-1—99-12	2015
99-13—99-24	2016
99-25—99-36	2017

Condition standards are exceeded in the NRA when there is more than one high impact site per mile. Several of the sites exceeding condition standards may exceed standards based primarily on historic impacts. For example, site #2 at Poe Meadows is located at a historic cabin site. Franklin Bridge #20 is also located at a historic site. Both of these sites show significant tree scarring, exposed roots, and bare mineral soil. These impacts most likely originated before the Congressional designation of the NRA in 1980. Current use has perpetuated these impacts. The historic use and durable surfaces associated with the sites make for interesting and ideal campsite locations in OC 4 and 5. Managers must consider these details when taking action to address condition ratings.

Most campsites in the NRA are located in OC 4 and OC 5. The density standard for these classes are to, "Strive for visual and auditory separation, but no more than three campsites per mile or no increase over the existing situation." Based on auditory and visual separation, campsites located at Elk Meadows and Poe Meadows are currently out of density standards. For example, Elk Meadows, located in OC 4, should provide low levels of inter-party contact at camps based on the campsite density standards, however, campsites in this area are within both auditory and visual distance from one another. Similarly, the Poe Meadows campsites located in OC

5 also have frequent inter-party contact due to limited auditory and visual separation between the sites. However, it is important to note that a cursory assessment of campsite density and use suggests that there are more campsites than may be occupied during peak use periods. These camps have been intentionally left out of standard.

The decision to leave Elk Meadows out of compliance with density standards for 2012 was influenced by the early season Rattlesnake elk hunt. This meadow is heavily used as a campsite during the hunt and, at times, all three campsites are occupied. Naturalizing one of the sites would put pressure on the remaining sites and may lead to the creation of new campsites and additional resource impacts. Both Elk Meadows and Poe Meadows will continue to be monitored to determine if management action is necessary in the future.

Other campsites in OC 4 and 5 have a greater degree of auditory and visual separation, but exceed the "three sites per mile" standard. It is unclear if campsites are above or below the "existing situation" standard, the reference point being 1992 conditions referenced in the LAC Based Management Direction. Therefore, these sites were considered to be within density standards based on their auditory and visual separation.

Technical Note 1: In an effort to create a more detailed and complete campsite database, campsite names have been replaced by campsite numbers. The first number indicates the closest road or trail to the site, followed by the site number. Those points that still have a site name and number have not been evaluated since Rangers began recording latitude and longitude waypoints for each site. Two columns have also been added to the NRA Campsite Inventory Table in 2012. A column with the mile post/marker (odometer reading that begins at the Rattlesnake main trailhead bollard), and a column with historical/geographical place name reference (ex: Elk Meadows) should continue to be updated as sites are inventoried. In the future, an additional table should also be created to keep track of condition index scores over time so that previous scores can be easily referenced.

Technical Note 2: Campsite condition inventories/evaluations are only completed for sites that have been naturalized previously when use has occurred at the site since the last time an inventory was completed. If a Ranger is conducting an inspection of a site that has been previously naturalized and the site has not been used since the last documented inspection, record the site as NAT within the LAC Campsite Inventory Table.

Table 21 Campsite Inventory

NRA Site #	Geographic Identifier	Mile Marker (from Main TH bollard)	Latitude	Longitude	Elevation	Condition Index	Condition Index Change	Year Last Inventoried
99-1	Poe Meadows/ Concrete Foundation	3.0	46.9504	113.90418	3908	22	0	2012
99-1a	Poe Meadows/Concrete Foundation Satellite	3.0	46.9504	113.90418	3908	21	-1	2012
99-2	Poe Meadows/ Lilac Bushes	3.0	46.9517	113.927	3806	21	-3	2012
99-3	515.7 Creekside South	3.0	46.95198	113.923	3793	47	+6	2012
99-4	Beeskove North	6.1	46.97752	113.83883	4170	28	0	2012
99-5	Poe Main (S of Bear Pole)	3.0	46.95233	113.92241	3806	21	0	2012
99-6	Poe Main Upper (N of Bear Pole on bench)	3.0	46.95244	113.92325	3806	21	-3	2012
99-7	Poe Main Sattelite (S. of Main in regen. stand)	3.0	46.95245	113.92325	3806	21	0	2012
99-8	Brown Meadow (N of Rd 99)		46.95382	113.92152	3998	21	-8	2012
99-9	Frasier Creek (S of Rd 99 and Frasier Creek)		46.9544	113.91822	3825	21	-5	2012
99-10	Frasier Creek (N of Rd 99 and S of Frasier Creek)		46.95541	113.92029	3992	21	-3	2012
99-11	Frasier Creek (N of Rd 99 and S of Frasier Creek)		46.95575	113.92029	3960	22	0	2012
99-12	Frasier Creek Satellite		46.95584	113.91931	3948	21	0	2012

NRA Site #	Geographic Identifier	Mile Marker (from Main TH bollard)	Latitude	Longitude	Elevation	Condition Index	Condition Index Change	Year Last Inventoried
	(N of Rd 99 and S of Frasier Creek)							
99-14			46.95869	113.89585	3990	36	-11	2009
99-15			46.95916	113.90232	3997	27	-3	2009
99-16			46.95928	113.90403	3911	21	-13	2009
99-17			46.95939	113.90985	3873	21	-13	2009
99-18			46.95965	113.88941	3932	NAT	-24	2009
99-19			46.96003	113.87759	3941	30	-4	2009
99-20			46.96098	113.90217	3912	20	-4	2010
99-21			46.96161	113.90213	3906	23	+23	2010
99-22			46.96439	113.87133	4057	34	-1	2010
99-23			46.96532	113.87222	4079	24	-1	2010
99-24			46.96618	113.86657	4005	21	+21	2010
99-25			46.9669	113.86367	3997	36	+15	2010
99-26			46.96712	113.86352	4106	24	-6	2010
99-27			46.96805	113.8587	4065	40	+2	2010
99-28			46.96808	113.8587	4072	23	+2	2010
99-29			46.96816	113.85756	4107	NAT	-21	2010
99-30			46.96906	113.85493	4112	27	+6	2010
99-31			46.96975	113.8534	4101	35	+2	2010
99-32			46.97745	113.83888	4147	44	+10	2010
99-33			46.98045	113.83682	4217	50	+5	2010
99-34			46.98086	113.83633	4270	45	+4	2010
99-35			46.9815	113.83732	4284	22	+1	2010
99-36			47.02239	113.84716	4762	29	+8	2010

The following scale of the weighted impact index is used in part to assess campsite condition:
Minimum impact: 20-23 Moderate impact: 24-34 High impact: 35-45 Extreme impact: 46-60
NAT indicates a site remained unused and an inventory with rating score was not completed.

Factor: Vandalism/Regulation Violations

Table 22 Opportunity Classes and Standards

Opportunity Class	Standard
1-6	No standard; monitor number of incidents; upward trend in number of incidents will trigger management actions

The number of incident reports, warning notices, and violation notices issued annually is dependent upon program of work priorities, available staff, and the attitude and willingness of Rangers to exercise their Forest Protection Officer duties. Documented violations in this report due not necessarily represent the actual numbers of law violations that occur in the RNAW annually. For example, from 2006 to 2008, violation, warning, and incident report data was unavailable for the RNRAW in most instances and was not recorded in the LAC report. Law Enforcement and Investigation reporting data was also not available in 2011 and 2012. Therefore, prior to 2011, only a portion of both Law Enforcement Officer and Forest Protection Officer violations were reported and displayed in the following table. Several patrol positions have also been eliminated in recent years. The following Table (Table 23) only displays law enforcement actions taken by Forest Protection Officers starting in 2011. As of 2012, all enforcement actions taken in Wilderness including the issuance of incident reports, warning notices, and violation notices are displayed under the Wilderness section of the LAC report in Table 36.

Table 23 Incident Reports/Warning Notices, Violation Notices ~ Rattlesnake NRA and Wilderness (prior to 2011) Trends:

Violations	Incident Reports/Warning Notices													Violation Notices										
Year	00	01	02	03	04	05	06	07	09	10	11	12		00	01	02	03	04	05	06	07	09	10	11	12
Parking at horse trailhead	82	79	87	83	89	83	0	0	6	4	0	0		0	0	0	0	0	1	0	0	1	0	0	0
Dogs not on leash	46	21	29	16	25	7	0	0	2	3	0	0		0	0	0	0	0	2	0	0	1	1	2	7
Dogs in closed area	4	0	7	4	1	0	0	0	4	4	0	0		0	0	0	1	0	0	0	0	2	3	0	0
Damaging Govt. property	6	1	2	5	0	0	0	0	4	3	0	1		0	0	0	0	0	0	0	0	0	0	0	0
Removing Govt property	0	0	0	0	0	0	0	0	0	0	0	1		0	0	0	0	0	0	0	0	0	0	0	0
Illegal dumping	3	1	1	0	1	0	0	0	11	5	1	0		0	0	0	0	0	0	0	0	0	0	0	0
Litter	0	0	0	0	0	0	0	0	0	0	3	3		0	0	0	0	0	0	0	0	0	0	0	1
Abandoning property	0	0	0	0	0	0	0	0	0	0	4	0		0	0	0	0	0	0	0	0	0	0	0	0
Camping in South Zone	1	1	0	0	0	0	0	0	2	1	2	2		0	0	1	1	0	0	0	0	0	0	0	0
Illegal OHV use	1	2	0	0	1	0	0	0	0	2	0	0		0	0	0	1	0	0	0	0	0	0	0	0
Parking in disabled area	0	3	9	6	7	1	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
Car vandalism	0	1	0	0	0	0	0	0	0	2	0	0		0	0	0	0	0	0	0	0	0	0	0	0
Stream Pollution	0	1	0	0	0	0	0	0	0	0	0	1		0	0	0	0	0	0	0	0	0	0	0	0
Bike on stock bridge	1	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
14 day stay limit	0	0	0	0	0	0	0	0	2	1	0	1		0	1	0	0	0	0	0	2	0	0	0	0
Building/ maintaining trail	2	0	0	0	0	0	0	0	0	0	0	1		0	0	0	0	0	0	0	0	0	0	0	0
Food storage	0	0	0	0	0	0	0	0	0	0	1	2		0	0	0	0	0	0	0	0	0	0	0	1
Carcass storage	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	1
Illegal shooting	2	0	0	0	0	0	0	0	3	1	0	0		0	0	0	0	0	0	0	0	0	0	0	0
Biking where prohibited	0	0	0	1	1	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
Damaging/cutting trees	0	0	0	0	1	0	0	0	1	1	0	0		0	0	0	0	0	0	0	0	0	0	0	0
Campfire in South Zone	0	0	0	0	1	0	0	0	6	4	2	1		0	0	0	0	0	0	0	0	0	0	0	0
Escaped Campfire	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
Fire During Stage 1	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	1
Horse Trailer @ Main TH	0	0	0	0	1	0	0	0	1	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
Illegal parking	0	0	0	0	1	0	0	0	2	1	0	0		0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	148	110	135	115	128	91	0	0	44	31	13	13		0	1	1	3	0	3	0	2	4	4	2	11

Factor: Vegetation

Table 24 Indicators, Opportunity Classes and Standards

Indicators	Opportunity Classes	Standards
Insect Threat	1,2, & 4	No control
	3,5, & 6	Need to complete risk survey before setting standards (2-4 years?)
Noxious Weeds	all	Controls are desirable; biological control preferred, other methods will be considered in project environmental analysis. Cutting meadow in Sawmill Gulch acceptable/desirable until more positive control approved
Vegetative Diversity	all	Monitor. Compare vegetative community composition every 10 years against previous decade's communities by aerial photo interpretation

Weeds

Noxious and invasive weeds such as spotted knapweed, common tansy, St. Johnswort, sulfur cinquefoil, Canada thistle, Dalmatian toadflax, common toadflax, leafy spurge, houndstongue, oxeye daisy, cheat grass, and orange hawkweed are found in the NRA and along the following trails:

Sawmill Trail #24,
Stuart Peak Trail # 517,
Rattlesnake Rd 99/Trail #515,
East Fork Rattlesnake Trail #514,
Sheep Mountain Trail #513,
West Fork Gold Trail #52,
Grant Creek Ravine Trail #34,
Curry Gulch Trail #28,
Wallman Trail #29,
Woods Gulch Trail #326

A commitment to noxious weed control efforts in the NRA solidified in 1996 utilizing an Integrated Pest Management approach that continues today. Noxious weed control efforts includes: education, prevention, biological controls, and herbicide application. Small noxious weed infestations have been eradicated, large infestations contained, reduced, or eradicated, and several other protection measures have been taken to prevent weeds from infesting the Rattlesnake Wilderness. Noxious weed management in the NRA targets vectors such as trails and disturbance areas (management, user, and nature caused) and new infestations of noxious weeds and new invaders. Mapping noxious weed infestations is another tool used to plan control efforts in the NRA and Wilderness. Mapping inventories conducted in 2002 and 2009 indicated approximately 2,435 acres were infested with noxious weeds, mostly scattered along trails, roads, and open forested areas.

Small infestations of Dalmatian toadflax were eradicated along Road 99/Trail #515 and at all of the farmstead sites by the year 2006 after discovery in 2000. These sites are continually being monitored. Incidental discovery of Dalmatian toadflax infestations has occurred in the Spring Gulch meadow; these plants were pulled. Another infestation was discovered at the junction of the Curry Trail (TR# 28.1) and the Stuart Peak Trail (TR# 517) and treated with herbicides in 2005 and 2006. Follow-up monitoring and possible re-treatment is planned for 2012. Volunteers associated with the Grant Creek Homeowners Association have pulled Dalmatian toadflax in 2005, 2006, and 2007 in Sawmill Gulch. This site was also treated with herbicides. All sites are continually being monitored.

Orange hawkweed is another noxious weed found in the NRA that is not widespread and only occurs in two small infestations in Spring Gulch along the Stuart Peak Trail (TR# 517). One infestation is approximately ¼ mile above the Curry Trail (TR# 28.1) junction and one is approximately ¼ mile below the Curry Trail (TR# 28.1) junction. These sites were treated in 2001 and 2005. Monitoring efforts in 2006 indicated the treatment had reduced the infestation on the site above the Curry Trail and eradicated the infestation on the site below the Curry Trail. Monitoring in 2009 showed no signs of orange hawkweed at both sites; however, in 2011 both sites were monitored again and orange hawkweed was found at both sites. The sites were subsequently treated that same year. Both sites will continually be monitored.

Oxeye daisy, spotted knapweed, Canada thistle, and common tansy was concentrated in public use areas between Elk Meadows and Trail #502 to Little Lake and Trail #534 to Carter Lake. The weeds were treated in 2010 along the corridor in the NRA and post treatment monitoring indicated the treatment significantly reduced these weed species. In 2011, these trails were monitored again by the Wilderness Ranger. Only a couple of spotted knapweed and oxeye daisy plants were observed. These plants were immediately hand-pulled. These trails will be monitored for future treatment needs.

Biological weed controls are also used in the NRA mostly for control of leafy spurge, spotted knapweed, and Dalmatian toadflax. Releases have been made in Sawmill Gulch, the main Rattlesnake Trailhead and in Woods Gulch for leafy spurge (*Apthona* spp., *Oversea erythrocephala, Oberea erythrocephala*) since 1996. Spotted knapweed biological control releases started in Sawmill Gulch in 1992 with releases of *Agepeta zoegana* and continue today with addition releases of *A. zoegana* as well as *Cyphocleonus achetes*, *Larinus minutes*, *Urophora affinis*. *Cyphocleonus achetes* releases have also been made along the main Rattlesnake Trail (TR#515). Dalmatian toadflax biological control (Mecinus janthinus) has been released in Sawmill Gulch. Control results are slow to observe with biological control releases. But each site is monitored and supplemental releases are made if needed. Manual control is another control method that is used, especially in the Wilderness or difficult to access areas of the NRA. As individuals or crews work in the NRA backcountry and come across new infestations, the locations will be documented or mapped and often times the weeds pulled. In 2011, the Missoula Ranger District's Weed Program Manager organized a volunteer weed pull with the Forest Service Regional Office. Twelve volunteers pulled and bagged over 250 pounds of weeds, primarily knapweed, along the Spring Gulch Trail. Incidental hand-pulling by the public is observed throughout the NRA along trails. These efforts are highly appreciated and assist in the elimination of weed spread and reduction of infestations.

Sites treated with herbicide in 2011 include the Main Rattlesnake Trailhead, the Rattlesnake Horse Trailhead, Sawmill Gulch, and Spring Gulch in the NRA.

Table 25 Weed Control Other Than Biological Control Agents FY 2011 NRA Herbicide Treatments

Location	Weeds Treated	Control Used	Amount
Sawmill Gulch	SK, CT	Aminopyralid	Spot Treatment
Spring Gulch	SK,SC,OD	Aminopyralid	Spot Treatment
Spring Gulch	SK,SC,OD	Region One Volunteer Weed Pull	250 pounds of weeds

*Spotted knapweed (SK), oxeye daisy (OD), Canada thistle (CT), houndstongue (H), Dalmatian toadflax (DT) yellow/common toadflax (YT), sulfur cinquefoil (SC) leafy spurge (LS)

Factor: Riparian Zones

Table 26 Indicators Opportunity Classes and Standards

Indicators	Opportunity Classes	Standards
Amount of bare soil in riparian zone	1-6	Not determined yet, but will define quantitative amount of bare soil in riparian zone; also will define riparian zone (20' contour from streambed?)

No survey or management action was taken in 2012

Factor: Fire

Table 27 Indicators Opportunity Classes and Standards

Indicators	Opportunity Classes	Standards
Ladder fuels in high use areas	3-6	Standard not yet firm. Tree cutting will be allowed to reduce high hazard ladder fuels and to facilitate prescribed burning. Cut designation will be by individual tree evaluation. Tree cutting will be allowed to meet resource objectives other than timber management.

An ecosystem maintenance burning environmental assessment was completed in 1997 for the NRA. No prescribed burns were conducted in the NRA in 2012. Several units have been identified, but no dates have been selected for these potential burns. The goals for future prescribed burns are to:

- enhance winter range production
- reduce wildfire severity
- recruit old growth ponderosa pine
- protect the wildland urban interface (WUI) zone.

Table 28 Ecosystem Maintenance Burning Units Covered By Existing Decisions

Unit	Acres	Status
West spring Gulch	569	Burned in 1998
Strawberry Ridge	1106	Burned in 1997
Pilcher South	296	
Sawmill North	108	
North Ray Gulch	178	
Upper Ray Gulch	40	
North Woods Gulch	655	
Upper Woods Gulch	46	

Sawmill Gulch Fuels Reduction Project

An Environmental Assessment and Decision Notice was signed in 2004 by the District Ranger to conduct 754 acres of fuels treatment in Sawmill Gulch and lands adjacent to the NRA. Prior to 2012, 326 acres of fuels

reduction treatment was completed. In 2010, 20 acres of trees were thinned, piled, burned, and piles seeded around the Sawmill Meadow. In 2011, an additional 184 acres were thinned. Slash piles on 30 acres were burned in 2011. Piles were also burned in 2012.

Marshall Woods Restoration Project

Lolo National Forest staff are currently engaged in a collaborative process with a citizens group called the Lolo Restoration Committee (LRC) planning the Marshall Woods project. This project proposes to implement forest restoration activities in the lower NRA including, the main corridor, Woods Gulch, and areas located outside of the NRA in adjacent Marshall Canyon. An EA and Decision Notice may be completed in 2013.

Factor: Wildlife

Table 29 Indicators, Opportunity Classes, and Standards

Indicator	Opportunity Classes	Standards
Occupied beaver and other water dependent animal habitat	all	Limited trapping (removal) of animals permissible for research and information in pursuing knowledge about the occurrence and spread of *Giardia*. Removal is not defined as the elimination of a species. Maintain a minimum of three beaver colonies between Rattlesnake trailhead and Elk Meadows. Trapping is prohibited in the NRA.
Big game distribution and population on winter range	n/a	Mule Deer: Loop transects on Strawberry Ridge, two counts per year. Normal population is 40-60 mule deer. Standard is set at a range of 30-70 seen animals. If count outside this range for 2 consecutive years, investigation will follow
		Elk: Fixed-wing flights counts, two per year. Normal count is around 60 animals. Standard is set at range of 40-70 seen animals. If count outside this range for 2 consecutive years investigation will follow. Normal range is from Grant Creek east to Rattlesnake Creek. Elk moving west of Grant Creek indicates disturbance and/or displacement
Big game winter forage production	n/a	At least 500 acres of winter range should produce a minimum of 200 lbs. of desirable forage per acre per year
Animal species diversity		Bird and mammal species and count surveys will monitor occurrence of species. Standard surveys used repeatedly over time will provide the desired information.
Animal damage or harassment		Monitoring item – no standard

2010 Wolf track: trail #358

2010 Mountain Lion track: trail #534

2010 Black Bear track: trail #518

Grizzly Bear Occurrence

Over time, grizzly bears with cubs have been observed at the headwaters of the Jocko River on the Flathead Reservation which is adjacent to the RNRAW. Grizzly bear sightings have also been reported on the south side of the Reservation Divide, or northern boundary of the Rattlesnake Wilderness, in the upper Rattlesnake Creek drainage. Unverified reports of grizzly bears observed in the Grant Creek Basin, along Wisherd Ridge, and in the lower reaches of the Rattlesnake drainage have also been made.

The current multi-agency effort to estimate the grizzly bear population in the Northern Continental Divide Ecosystem (NCDE) includes a portion of the Rattlesnake drainage. In 2004, Montana Fish Wildlife and Parks (FWP) crews monitored hair snags and bear rub trees during the summer field season in the Rattlesnake drainage. In 2004, twenty-four "cells," (four hair snag stations per cell) or a total of 96 hair snag stations, were monitored in the Rattlesnake Wilderness and 30 cells were monitored in the NRA. Ten to fifteen rub trees were also sampled. The results of this inventory were published in 2009 in the journal Wildlife Management. There were no hits from grizzly bears at rub trees or stations during the sample period in the RNRAW. Although, multiple hits from grizzly bears occurred at rub trees or stations at the southern extent of the Mission Mountains, just north of the RNRAW.

In 2009, FWP verified grizzly bear biscuit root dig sites along the Reservation Divide within the Rattlesnake Wilderness. FWP also received two additional reports of a potential grizzly bear den site and a dig site in 2012. Grizzly bear activity has also increased along the south end of the Mission Mountains, which has been verified by FWP and may also be an indication that more grizzlies will eventually move into the Rattlesnake Wilderness.

In 2011 and 2012, the U.S. Geological Survey (USGS), in cooperation with FWP, monitored grizzly bear hair snag stations in the upper Rattlesnake Wilderness during the summer field seasons. Results from the study are pending.

Bear/Human Confrontations (including bluff charges, maulings, etc) in Residential Areas and the RNRAW

A relatively large population of black bears frequents the lower Rattlesnake Valley. Habituation of bears to human food, garbage, and other attractants continues because food/garbage sources are still available in unprotected garbage cans, compost pits, bird feeders, and fruit trees on private lands. The Middle Rattlesnake Bear Taskforce has worked to reduce human/wildlife conflicts in the lower Rattlesnake.

In June 2011, a black bear snatched an unattended child's backpack at the main Rattlesnake trailhead. A local school group had left their lunches unattended outside of the bus. The bear was observed eating the contents of the lunch next to the trailhead parking lot. No visitors involved in the incident were injured. The incident was reported to FWP and the FS was notified.

In 2012, there were several incidents involving bears due to humans in the NRA. In June a sub adult black bear crawled through the window of a vehicle parked at the Woods Gulch Trailhead to obtain unattended food. Later that June, a food habituated black bear was seen on top of a vehicle at the Rattlesnake Main Trailhead. Wilderness Rangers also found two separate food caches which bears had also discovered. One cache was located in the NRA near the Jct. of High Falls Creek and Rattlesnake Creek. The other cache was found along the western shore of Worden Lake in the Wilderness. Wilderness Rangers packed out the remaining garbage. Most of the packaged and canned food had been opened and eaten by bears. Both caches appeared to have been prior to 2012. No conflicts between bears and humans were reported by visitors outside of the trailheads in 2012.

Forest Service efforts to reduce bear and human conflicts within the RNRAW:

On March 25th 2011, The Lolo National Forest Supervisor signed a Wildlife Attractant/Food Storage Order which requires all attractants (food, garbage, odorous items, etc.) to be stored in an approved wildlife resistant manner across the Lolo National Forest. The new order addresses the issue of potential human-wildlife encounters that biologists and land managers have determined to be increasing due to improper attractant/food storage. The order requires the storage of attractants in a "wildlife-resistant manner" – meaning attractants must be stored so that wildlife can neither reach the attractant (at least 10ft off the ground and 4ft. away from an upright support) nor access the attractant if stored in an approved bear resistant container, enclosed by an approved electric fence, or stored in a hard sided vehicle. The order requires attractants to be stored in an appropriate manner both during daylight hours and at night when not attended by someone that is at least 18 years of age. Attractants also include fish and wildlife carcasses, food, and materials used to prepare or contain food (cookware). Previously, in Region One, a wildlife/food storage order was in effect for the Rattlesnake portion of the NCDE, however, the Lolo National Forest Food Storage Order is now the controlling order for the Rattlesnake National Recreation Area and Wilderness.

Also starting in 2011, Wilderness Rangers/Forest Protection Officers began increasing education and sign posting (regulations and warnings) efforts. Enforcement of the food/attractant storage order was also increased and warnings and citations were issued when violations were discovered.

Past efforts have also been implemented to reduce wildlife/human confrontations. For example, in 2003, 16 bear resistance food storage poles (overhead food hanging poles) were installed in areas frequented by campers to reduce the availability of food/garbage to bears in the RNRAW and also improve compliance with the NCDE food storage order. Four of the poles are located in the NRA, eleven are located in the Wilderness, and one is located in a General Forest Area next to the Wilderness. The food storage poles have been increasingly utilized by visitors. An additional food storage pole should be installed at Fly Lake campsite #2 to address impacts from heavy public use that has occurred in recent years. Note: the trees in that area are difficult to hang food from in a suitable manner.

These actions along with proactive visitor education efforts and the issuance of food and attractant storage citations have potentially reduced the number of conflicts between bears and humans within the RNRAW.

Food Cached By Humans and Found By Bears-High Falls Creek NRA…..Packaged Foods Do Not Stop Curious Opportunistic Bear

Table 30 Food Storage Pole Locations and Inspection Log

Location	Number Of Poles Installed	Year Installed	Year Most Recently Inspected	Condition
Poe Meadows*	1	2003	2012	Satisfactory
Franklin Bridge*	1	2003	2012	Replace chains with J brackets
Elk Meadows*	1	2003	2012	Satisfactory
Poe Meadows*	1	2003	2012	Satisfactory
Boulder Lake	2	2003	2012	Satisfactory
Fly Lake	1	2003	2012	Satisfactory
Gold Cr / Fly Lake. Jct.	1	2003	2012	Satisfactory
Gold Ridge Cabin**	1	2003	2012	Satisfactory
Upper Twin Lake	1	2003	2012	Pole and tree are down (replace in 2013)
Lower Twin Lake	1	2003	2012	Satisfactory
Little Lake	1	2003	2012	Satisfactory
Glacier Lake	1	2003	2012	Satisfactory
Sanders Lake	1	2003	2012	Satisfactory
Carter Lake	1	2003	2012	Satisfactory
Worden Lake	1	2003	2012	Satisfactory
Big Lake	1	2003	2012	Satisfactory
TOTAL ***Located in NRA** ****Located outdside the NRA**	**16**			

Food Storage Pole with bear bag hung correctly at Sanders Lake- August 2012

Beaver Habitat in Rattlesnake Creek

No beaver monitoring was completed in the RNRAW in 2012. The LAC standard is to maintain a minimum of three colonies between the main trailhead and Elk Meadows.

Big Game Winter Range Monitoring

Big Game Use:

Two mule deer loop transect counts should be conducted yearly on Strawberry Ridge. A normal population for the RNRAW is 40-60 mule deer. No monitoring was completed from 2004-2012 due to budget constraints.

Mountain goats were reintroduced into the Rattlesnake Wilderness on February 5th, 1984. Mountain goats have occasionally been seen above Rattlesnake Creek on the western ridges along the main corridor. Their population has been somewhat stable according to past FWP fly-over surveys. However, the population is not considered to be large.

A count of mountain goats during fly-over surveys in the RNRAW in February of 1990 reported eleven sightings.

In July of 2004, FWP completed another aerial survey of mountain goats in the RNRAW. Ten goats were observed with most concentrations of the goats occurring in the High Falls and Lake Creek drainages. Estimated probability of successful detection of goats was believed to have been 60%. The goat population in the RNRAW was estimated as16 individuals. Fourteen bighorn sheep were also observed.

In the spring of 2010, a FWP aerial survey of the RNRAW detected ten mountain goats (one kid, two yearlings, six nannies and one billy). Three black bears, 24 mule deer, and four elk were also observed.

Three rams were reported to have been observed in the Grant Creek Basin in May 2010. FWP surveys estimate the population to number around 20 individuals. However, also in 2010, a pneumonia outbreak reduced the Rock Creek and Milltown bighorn sheep populations. This outbreak possibly affected the Rattlesnake bighorn sheep population.

FWP also collared a wolf in the Evaro pack in May 2010 in an area adjacent to the RNRAW.

Mountain goat in the Rattlesnake Wilderness

Forage Production: No monitoring was conducted in 2012. The fires of 2003 resulted in a temporary short term decrease in forage for both bears and big game, although the long term outlook for burned areas is for an increase in potential forage (FWP). The standard for forage production is 500 acres of winter range producing 200 lbs. of desirable forage per acre per year.

Recreation Use: No recreation user monitoring was conducted in the RNRAW for 2012 in big game winter range.

Recreation use has been previously monitored on adjacent Lolo NF, FWP, and City lands in the Mount Jumbo area. This area is part of a big game winter range closure for the Mount Jumbo elk herd.

Animal Damage/Harassment

There were no reports of animal damage or harassment in the RNRAW in 2012. FWP received reports of bears eating trash, bird seed, and fruit in the Rattlesnake neighborhood area. The Forest Service and FWP also received several reports of mountain lion sightings.

Rattlesnake Wilderness

Factor: Education

Table 31 Indicators, Opportunity Classes, and Standards

Indicators	Opportunity Classes	Standards
Number of formal education trips into the RNRAW	1 & 2	No limit on number of trips as long as encounter and solitude standards are not exceeded: group size limited to 10 people

There were two formal education courses that occurred in the Rattlesnake Wilderness in 2012. Permitted UM Campus Recreation avalanche education classes were accessed via the Montana Snowbowl ski area and took place east of Point 6 in the Wilderness.

Table 32 Wilderness Education Trips-Avalanche Training Course

Program	Number of Classes	Number of Participants
UM Campus Recreation in partnership with Western Montana Avalanche Center	2	16 (eight per class)

Education Contacts are generally made by Wilderness Rangers with Wilderness visitors as they are encountered. During those encounters, Wilderness Rangers primarily discussed Leave No Trace principles and practices and regulations. Additional education efforts were made at the trailheads by contacting visitors, posting and maintaining LNT information, Wilderness regulations, and food storage regulations.

The lead Wilderness Ranger also set up a food storage demonstration for 3rd graders at the annual Nature Walk Week Leave No Trace presentation. The 3rd graders learned the items that should be stored to reduce conflicts with bears and how to properly hang the attractants. The lead Wilderness Ranger set up a *good LNT camp* and a *bad camp* demonstration. Students also learned how to properly dispose of waste, learned naturalization techniques, and discussed how and why Wilderness is special and different from other lands.

Other off-site Wilderness education activities included the Leave No Trace program which explores the role of Wilderness in our society and how we impact our environment. The LNT presentation defines and discusses the

concept of Wilderness, explains how visitors impact the backcountry, and demonstrates techniques to reduce those impacts by leaving no trace when visiting these areas. The LNT education program is presented to fifth and sixth grade students annually (refer to Table 33).

Table 33 Wilderness Education Leave No Trace Presentations in 2012

School	Grade	Number Of Presentations	Number of Students / Attendees
Washington Middle School	6	2	45
Cold Springs	5	3	80
C.S. Porter	6	3	90
Bonner	5	1	43
Target Range	5	2	56
Franklin Elementary	5	2	50
Frenchtown	6	2	105
Chief Charlo	5	3	81
Hawthorne School	5	1	28
St. Joseph	5	1	34
Rattlesnake Elementary	5	3	76
Forest Discovery Days	5	6	120
Nature Walk Week	3	6	200
Totals	-	35	1008

Factor: Vandalism/Regulation Violations

Table 34 Vandalism Standards

Indicators	Opportunity Classes	Standards
Vandalism	n/a	No standard; monitor number of incidents; upward trend in number of incidents will trigger management actions

Violation Notice, Warning Notice, and Incident Report totals are displayed in Table 36. The number of incident reports, warning notices, and violation notices issued annually is dependent on program of work priorities, available staff, and the attitude and willingness of Wilderness Rangers to exercise Forest Protection Officer duties.

Table 35 Incident Reports/Warning Notices, Violation Notices, and Trends for both Rattlesnake NRA and Wilderness:

Violations	Incident Reports						Warning Notices						Violation Notices				
Year	2012	2013	2014	2015	2016		2012	2013	2014	2015	2016		2012	2013	2014	2015	2016
Damaging Govt. Property	0						0						0				
Removing Govt. Property	0						0						0				
Litter	0						0						0				
Water Pollution	8						0						0				
14 Day Stay Limit	1						0						0				
Food Storage	0						0						2				
Carcass Storage	0						0						0				
Damaging/cutting trees	1						0						0				
Building/maintaining trail	0						0						0				
Escaped Campfire	1						0						0				
Motorized Use	0						0						0				
Biking in Wz	0						0						0				
Totals:	11						0						2				

Table 35 only displays law enforcement actions taken by Forest Protection Officers.

Illegal mountain bike use has been decreasing in the Rattlesnake Wilderness over the last decade. Mountain biking in Wilderness was a bigger issue in the late 1990s. However, in 2009 three members of the same party were cited for illegal mountain bike use on the Boulder Lake Trail #333 in the Wilderness. In 2012, there was one report of mountain bike use in the Wilderness; a bike tire track was observed along the Wrangle Creek trail #502. When Wilderness Rangers contacted mountain bikers in the NRA outside of the Wilderness, many mountain bikers stated they knew mountain bikes were not allowed in Wilderness and also indicated a willingness to comply with the regulations. Areas of most concern for potential illegal mountain bike use and areas where violations have occurred in the past include the:

- Wrangle Creek Trail #502
- Lake Creek Trail #534
- Stuart Peak Trail #517

Boulder/Fly Lake Area: During the 2007 and 2008 field season, reports of a user created trail from Boulder Lake to Fly Lake were investigated. No evidence of a trail connecting the two lakes was found. The area was monitored again in 2011 and 2012 and no trails were found.

Of all the lakes in the Rattlesnake Wilderness, Boulder Lake continues to see the most use and the most resource violations. Wilderness Rangers increased patrols of Boulder Lake during the 2012 field season. Wilderness Rangers often observed a dozen vehicles parked at the West Fork Gold Creek Trailhead with most visitors going to Boulder Lake as their destination. Wilderness Rangers focused public education contact efforts on prevention in order to reduce and prevent violations. In the evenings, Wilderness Rangers visited camps and informed campers where to find food storage poles, as well as, gave out ropes to parties who did not have ropes to hang their attractants. Although Leave No Trace education efforts were generally successful, food storage violations, an escaped campfire, improper disposal of human waste, and burning garbage occurred throughout the season at the lake. Violations were addressed and violation notices issued to offenders. Patrols to Boulder Lake must be frequent and focused on Saturday nights and Sunday mornings throughout the season. Wilderness Rangers are able to glass almost every campsite with binoculars at Boulder Lake from Boulder Point in order to determine use levels and to detect regulation violations.

Escaped campfire at Boulder Lake August 2012 –Discovered by Wilderness Rangers and Extinguished

Elk Meadows: In 2012, Wilderness Rangers increased visitor education contacts which successfully reduced issues historically seen at this popular and heavily used camping area. A regulation sign and LNT practices for stock users were placed at the entrance to Elk Meadows in 2011 to reduce resource impacts. This sign was stolen after Wilderness Ranger patrols ended in 2011. The sign was replaced in July of 2012. In November of 2012, one group was cited for leaving the site in an unsanitary condition. This group was also warned not to drive their wagon across the meadows into their camp. The group had received a warning notice the previous year for similar violations. In general, site conditions and regulation compliance improved in 2012. Wilderness Rangers should continue to patrol Elk Meadows consistently throughout the season.

Elk Meadows food storage pole being utilized by participants of the Rattlesnake Early Season Elk Hunt -September 2012

Damage Associated with Stock in 2012: No sign of livestock using trails closed to stock was discovered in 2012. The most recent livestock violation occurred on the Glacier Lake Trail #334 in 2011. However, complaints about campsites damaged by stock at Sanders Lake continued to be received in 2012.

Newly established stock holding sites in fragile areas also present a major concern for Wilderness Rangers and managers. Although stock users at these sites have provided certified noxious weed seed free forage products (verified during camp inspections), Canadian thistle is now present in these areas. To maintain opportunities for stock users and reduce the spread of noxious weeds in the Rattlesnake Wilderness in the future, Leave No Trace education for stock users should continue to be a priority in 2013 along with the issuance of violation notices for stock associated resource damage and possession of non-certified forage products.

Disturbed soil and vegetation loss can lead to weed infestations in high elevation meadows

Non-System User Developed Trails: In the fall of 2007, a user trail known as the Porcupine User Trail (a.k.a. The PUT) was reconnoitered and mapped. This trail has been used by hunters for many years during the elk hunting season. This trail has also been illegally maintained historically. The illegal trail was cleared and maintained between National Forest Road (NFR)4323 and the Porcupine Creek Trail #504. Chainsaw use in the Wilderness was also a major issue and violation of Wilderness regulations associated with this user trail in the past. Chainsaws were not only used for trail maintenance, but also for cutting firewood at one of the campsites along the route. A Forest Service trail crew completed restoration work on the trail in October 2007. Two Montana Conservation Corps groups obliterated the trail in July 2008 after the trail continued to see use. The PUT has been patrolled continuously since 2008 and most recently in 2012 numerous times. The trail continues to be traveled and camped on by hunters. However, the trail was not being maintained (cleared and marked). The route is slowly naturalizing and becoming harder to find and follow.

Another user trail was found in early September 2008 branching off of the PUT and connecting to NFR 4323. This trail is another access route into the Porcupine Creek area and may have been cut out and blazed because of the restoration/obliteration of the PUT. The trail was reconnoitered, mapped, and all flagging was removed. This trail will be monitored again in 2013 to ensure it has not been reopened.

An additional illegal route cut by chainsaws was noted by Wilderness Rangers in October 2012. This user trail also leaves NFR 4323 heading in the direction of Porcupine Ridge. Wilderness Rangers followed the route and did not observe cuts beyond ¼ mile from the road.

In conclusion, illegal routes historically have occurred and continue to be cut out along NFR 4323 during early October. Wilderness Rangers need to conduct patrols of this area to monitor for maintenance of historic user trails and the creation of new routes.

Low flying aircraft and associated impacts to solitude: In recent years, air traffic intrusions were common over the Rattlesnake Wilderness. Pilots are requested (by Federal Aviation Administration – FAA – Advisory Circular 91-36C) to maintain a minimum altitude of 2,000 feet above the surface of Wilderness and Primitive areas administered by the Forest Service. Wilderness Rangers observed an increased number of less than 2000 foot helicopter flights directly over the Wilderness in 2008 and 2009. The LNF Aviation Officer was contacted and asked to relay information on Wilderness ethics and the 2000 foot FAA Advisory to pilots flying in the area. Mountain Water Company (MWC) has the authority under the RNRAW Act of 1980 to both fly and drive to conduct dam maintenance in the Rattlesnake Wilderness. During 2012, helicopters were observed flying low on multiple occasions. These flights were most likely associated with authorized MWC activities.

Food Storage Order: In general, food and attractant storage compliance in 2012 was fair. After years of education efforts, multiple food storage/regulation signs posted at trailheads and key areas, the issuance of verbal warnings, and the adoption of a forest wide special order, Wilderness Rangers have moved toward issuing citations in order to reduce wildlife/human conflicts.

In 2012, multiple food storage violations occurred within the Rattlesnake National Recreation Area and Wilderness. One violation notice was issued at Boulder Lake. Another violation notice was issued at an archery hunter's camp in a remote area of the upper Rattlesnake Creek drainage. A carcass storage violation was issued to archery hunters who left elk quarters on the ground within ½ mile of a popular camping area in the NRA. Finally, another violation notice was issued at Franklin Bridge. A bear was observed by the Forest Protection Officer several hundred yards away from the unattended food at Franklin Bridge. Many of these violations involved pre-packaged freeze dried meals which members of the public did not believe to be attractants. Three of the four parties that were cited stated they knew about the food and attractant requirements.

In 2012, Wilderness managers also worked with FWP to attach a copy of the Food Storage Order to the information packet sent out to all hunters participating in the early season elk hunt. This appeared to reduce food storage violations seen among early season elk hunters. All of the early season elk hunters that Wilderness Rangers encountered had an awareness of the food and attractant storage requirements. All food and carcass

storage violations by hunters in 2012 were associated with archery hunters, who did not receive a copy of the Food Storage Order from FWP. Although signs are posted at all trailheads, Wilderness Rangers should work to continue education and enforcement efforts among the hunting community.

Wilderness Ranger Intern observes camps at Boulder Lake from the historic lookout site at Boulder Point

Factor: Trails

Table 36 Trail Standards

Indicator	Opportunity Classes	Standards
Various: clearing width, tread width, maximum sustained grade, maximum sustained tread depth	1	No trails or roads; no new trails or trailheads
	2	Clearing 3'-4' wide, 8' high; tread width: 12"-18"; maximum sustained grade: 30% for no more than 300'; max. sustained tread depth: 4" for no more than 200'; new trails only for correction of resource damage or public safety and possible new access from Grant Creek or Marshall Canyon; no new trailheads

- The Missoula Wilderness Crew cleared 36 miles of trail within the Rattlesnake Wilderness and maintained all of the water bars along Boulder Lake Trail #333
- The Missoula Range District Trail Crew constructed two re-routes (1400 ft and 700 ft) on the Main Gold Creek Trail #518 in order to relocate the trail out of a boggy area that is typically under water until mid- July to a more sustainable location.
- The Missoula Range District Trail Crew replaced six treated water bars on Trail #518

Wilderness Trail Maintenance in 2012 – Boulder Lake Trail

Factor: Use and Users

Table 37 Use and Users Indicators, Opportunity Classes and Standards

Indicator	Opportunity Classes	Standards
Group size	1-5	10 persons per party
Trail encounters	1	1 group per day
	2	3 groups per day
Campsite encounters	1	0 groups per night
	2	1 group per night
Campsite density	1	No increase in existing number of campsites
	2 & 3	No more than three sites at each of the lakes. Other areas: no more than three per mile or no increase over existing situation
Campsite condition	1	Evidence of camping not to persist from year to year
	2 & 3	None worse than moderate
Reports of user conflict	all	No standard; will monitor number of incidents; upward trend in incidents will trigger management actions

Table 38 Use and User Campsite Encounters Rattlesnake Wilderness FY2012

Date	Location	OC #	Type of Party	Party Size	Type and # of Animals	Trip Length	Groups per OC	Standard Met?
7/1/12	Boulder Lake	2	Hike	2	-	1 night	1	GS=Y, CE=Y
7/6/12	Boulder Lake	2	Hike	1	-	1 night	1	GS=Y, CE=N
7/6/12	Boulder Lake	2	Hike/Fish	4	2 dogs	2 nights	1	GS=Y, CE=N
7/7/12	Boulder Lake	2	Hike/Fish	2	-	1 night	1	GS=Y, CE=N
7/7/12	Boulder Lake	2	Hike	2	-	1 night	1	GS=Y, CE=N
7/21/12	Boulder Lake	2	Hike/fish	4	2 dogs	2 nights	1	GS=Y, CE=N
7/21/12	Boulder Lake	2	Hike/fish	2	-	1 night	1	GS=Y, CE=N
8/10/12	Sanders Lake	2	Hike	2	1 dog	2 nights	1	GS=Y, CE=N
8/10/12	Sanders Lake	2	Hike	1	-	2 nights	1	GS=Y, CE=N
8/25/12	Upper Twin Lake	2	Hike	1	-	2 nights	1	CE=Y, GS=Y
9/2/12	Stuart Peak	2	Hike	2	-	1 night	1	CE=Y, GS=Y
9/15/12	PUT Trail	2	Hunt	2	-	?	1	CE=Y, GS=Y
9/15/12	Boulder Lake	2	Hike	1	-	2 nights	1	CE=Y, GS=Y
9/21/12	515-2mile-west	2	Hunt	2	5 Horses	4 Nights	1	GS=Y, CE=Y
10/20/12	515-2mile-west	2	Hunt	2	5 Horses	4 Nights	1	GS=Y, CE=Y

GS=Group Size, TE=Trail Encounters

Wilderness Campsite Encounters were out of standard at Boulder Lake on the following dates: 7/6/12, 7/7/12, and 7/21/12. Sanders Lake Campsite Encounters were out of standard on 8/10/12.

Table 39 Use and Users Trail Encounters Rattlesnake Wilderness FY 2012

Date	Location	OC #	Type of Party	Party Size	Type and # of Animals	Trip Length	Groups per OC	Standard Met?
6/30/12	Tr. 502	2	Hike/Fish	1	-	1 night	3	GS=Y, TE=Y
7/7/12	Tr. 333	2	Hike	2	-	Day	3	GS=Y, TE=Y
7/21/12	Tr. 333	2	Hike/fish	1	0	1 night	3	GS=Y, TE=Y
7/21/12	Tr. 333	2	Hike/fish	2	1 dog	1 night	3	GS=Y, TE=Y
7/28/12	Tr. 517	2	Hike	3	-	2 nights	3	GS=Y, TE=Y
7/29/12	Tr. 534	2	Hike/Bike	2	-	1 night	3	GS=Y, TE=Y
7/28/12	Tr. 534	2	Bike/Fish	3	-	Day	3	GS=Y, TE=Y
8/19/12	Tr. 333	2	Camp/Fish	4	1 dog	1 night	3	GS=Y, TE=Y
8/19/12	Tr. 333	2	Camp/Fish	2	1 dog	1 night	3	GS=Y, TE=Y
8/19/12	Tr. 333	2	Hike/Swim	5	-	Day	3	GS=Y, TE=Y
8/25/12	Tr. 517	2	Hike	3	-	Day	3	GS=Y, TE=Y
8/25/12	Tr. 517	2	Run	1	1 dog	Day	3	GS=Y, TE=Y
9/1/12	Tr. 502	2	Hike	2	-	2 nights	3	GS=Y, TE=Y
9/1/12	Tr. 517	2	Hike	1	-	1 night	3	GS=Y, TE=Y
9/2/12	Tr. 52	2	Hike	2	-	2 nights	3	GS=Y, TE=Y
9/2/12	Tr. 52	2	Run	1	3 dogs	Day	3	GS=Y, TE=Y
9/21/12	Tr. 515	2	Hunt	1	1 Horse	4 Nights	3	GS=Y, TE=Y
9/29/12	Tr. 333	2	Hike/fish	2	-	1 night	3	GS=Y, TE=Y

GS = Group Size and TE = Trail Encounters

Table 40 Use and Users FY 2012 Wilderness Ranger Summary of Trail and Campsite Encounters in the Rattlesnake Wilderness

Type of Use	Number of Groups				Number of People		
	Day Use	Overnight	Total		Day Use	Overnight	Total
Hike	3	26	29		10	47	57
Fish	1	10	11		3	24	27
Hunt	0	4	4		0	5	5
Bike to Boundary/Hike	1	1	2		3	2	5
Bike to Boundary/Fish	1	0	1		3	0	3
Horseback	0	3	3		0	5	5
Run	2	0	2		2	0	2
Work (MCC / MWCo)	0	0	0		0	0	0
TOTALS	**8**	**44**	**52**		**21**	**83**	**104**

Voluntary Registration Program

In 2000, the voluntary Wilderness Registration Program in the Rattlesnake Wilderness Area began. Five registration boxes were installed in June and July of 2000 at trail access points into the Rattlesnake Wilderness (Point Six, West Fork Gold TH, Gold Creek TH., Stuart Peak Trail at Wilderness boundary, Rd 99 MP 12). Registration cards are collected at every opportunity throughout the season.

The Stuart Peak Trail registration box has been vandalized and destroyed on two past occasions. The box was rebuilt and reinstalled in 2005. A new steel registration box on Stuart Peak Trail #517 was installed at the Wilderness boundary in 2007. The new design has been successful in eliminating wildlife damage to the registration box.

In 2012, 268 registration cards were collected by Wilderness Rangers from the registration boxes. The following summary of visitor use describes percentages based on responses given for each registration card question.

Of the 268 registration cards gathered in 2012:

- 246 respondents were from Montana (92%)
- 10 respondents were from out of state (3%)
- 11 respondent places of residence were unknown (4%)
- 1 respondent was from a different country-Canada(1%)

Actual Wilderness use is not reflected in the registration card data because it is not mandatory for visitors to register. Some Wilderness areas such as the Anaconda-Pintler Wilderness and the Boundary Waters Canoe Area have a mandatory registration system. Benefits of mandatory registration include: ensuring visitors possess a hand held copy of Wilderness rules, regulations, and special orders. Mandatory registration also provides a more accurate measure of visitor use in the different opportunity classes. This management option will continue to be considered in the future.

Current registration numbers provide a sample of the numbers and type of use occurring in the Rattlesnake Wilderness. In 2003, Wilderness Rangers informally asked visitors encountered in or near the Wilderness area, if they had registered. Their assessment was that approximately one out of every four parties registered. However, actual Wilderness use may not be four times the registration amount because the boxes are on trails ***near,*** but not necessarily ***in*** the Wilderness. Therefore, many registered parties used trails with boxes but did not actually visit the Wilderness area. This scenario is especially applicable for the boxes located on Road 99 at mile 12 and the Stuart Peak Trail 517 located at mile six. Table 41 displays registration results by location and date. Table 42 displays activity types for the registered parties this summer.

Table 41- 2012 Rattlesnake Wilderness Area Registration Date and Locations

Box Location	Install Date	Total	AUG11	SEP11	OCT11	NOV11	DEC11	JAN12	FEB12	MAR12	APR12	MAY12	JUN12	JUL12	AUG12	SEP12	OCT12	NOV12
Point Six*	8/18/12 Replaced	15	0	4	0	0	0	0	1	0	0	1	0	1	6	2	0	0
Gold Cr.**	Replace	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W. Fk. Gold Cr.	6/9/00	61	0	0	0	0	0	0	0	0	0	2	8	18	14	18	1	0
Road 99	6/16/00	35	0	0	0	0	0	0	0	0	0	5	4	2	7	8	9	0
Stuart Peak	7/18/05	157	17	25	7	6	3	1	0	1	0	7	12	26	8	1	3	0

*The Point 6 Registration box is buried by snow in winter and is not available for use.

***The road to Gold Creek TH was closed all year. Use was minimal. Additionally, the registration box has been stolen. A new registration box should be installed in 2013.*

Table 42- 2012 Rattlesnake Wilderness Registration Activity Types

Box Location	Total #	Foot	Bike To Boundary	Snow Travel	Pack Stock
Point Six**	15	14	1	0	0
Gold Cr.	0	0	0	0	0
W.Fk.Gold Cr.	61	59	1	0	1
Road 99	35	6	26	0	3
Stuart Peak	157	142	15	0	0
TOTALS	**268**	**221**	**43**	**0**	**4**

*The Point 6 Registration box is buried by snow in winter and is not available for use.
**Some registrations do not indicate mode of travel so total numbers do not always add up. Additionally, stock users do not always indicate if they have stock on the registration cards.

Snowbowl Ski Area

Summer Use: The permitted Montana Snowbowl (MSB) ski area provides chair lift services Friday through Sunday 12:30 pm to 5 pm during the summer months (June – September) to both hikers and mountain bikers. Due to the proximity of the ski area to the OC 1 in the Rattlesnake Wilderness, Snowbowl is required to count and report chairlift riders with overnight backpacks and parties that plan overnight use from the chairlift. The monitoring objective is to ensure that the chairlift does not serve as a de facto Wilderness trailhead and use in the Wilderness does not exceed standards. Only the Grizzly lift operates in order to discourage lift served Wilderness access. The hours of operation were also designed to discourage lift served access to the most remote parts of the Wilderness.

The lift was operated for 35 days in 2012 from June 23rd through September 9th, Friday – Sunday, 12:30 to 5 pm. **Use was up 30% between 2011 and 2012.**

Table 43- Summer Chairlift Use at Snowbowl Ski Area

Year	Adult	Child/Senior	Mountain Biker	Overnight Use	Total Use
2012	3136	249	1013	8	**4406**
2011	1984	277	830	4	**3095**
2010	1901	260	662	6	**2829**
2009	1479	243	578	2	**2300**
2008	1207	178	513	6	**1898**
2007	1294	196	516	6	**2012**
2006	1143	237	559	5	**1944**
2005	1802	143	412	4	**2361**
2004	1570	108	178	1	**1857**
2003	633	169	266	0	**1068**
2002	1104	223	335	4	**1666**
2001	1166	174	183	4	**1527**
2000	566	137	282	4	**989**
1999	728	200	306	18	**1252**
1998	919	-	-	0	**919**

Photo taken from the Paradise ski run looking into the Grant Creek Basin

Winter Use: The upper Snowbowl Ski area lies directly adjacent to the Wilderness boundary. This has led to the "creep" of MSB skier use off developed runs and into the Rattlesnake Wilderness.

Yo-yo skiing (a term coined by John Korb, former Forest Service Rocky Mountain Region Winter Sports Coordinator) is a term used for when skiers use the developed facilities such as ski lift to loop off area, in this case Wilderness, ski down a slope and then traverse back into the ski area all by lift assisted skiing. At Snowbowl, "yo-yo" skiing means skiing off upper Paradise and the North Dakota Downhill to the point that the slopes above Rankin Lake were getting significant use and skiers were using the Wilderness as an extension of the ski area. Skiers were using the lift to yo-yo ski in the Wilderness without the climb required to enter the Wilderness through the established exit at Point Six. This exclusively lift assisted Wilderness access without climbing has developed distinctive runs in the Wilderness which constitutes developed recreation and ski area "creep" into the Wilderness. Developed recreation is not allowed in congressionally designated Wilderness areas. In 2005, the boundary management policy for Montana Snowbowl was updated in the annual operating plan to prevent the creep of developed lift served skiing and ski runs into OC 1 of the Wilderness by designating the Point Six exit point that leaves the ski area and by improving boundary management (fencing, signs, etc.). Monitoring in the winter of 2008 – 2012 indicated this boundary management was relatively effective, however, continued efforts are needed to ensure the effectiveness of reducing yo-yo skiing.

Boundary management is intended to keep OC 1 (Pristine) in the Grant Creek Basin as an undisturbed, unmodified natural environment with outstanding opportunity for isolation and solitude with an emphasis on sustaining natural ecological processes. At this point, the Rattlesnake LAC Direction does not differentiate between or have different standards for summer vs. winter use.

The Forest Service does not want to limit appropriate access to backcountry skiing experiences in the Wilderness. Skiers from Montana Snowbowl are welcome to exit the ski area at the established exit gates and ski from the ski area into the Wilderness and exit through the Wilderness, ski into the Wilderness and climb back up into the ski area, or enter the Wilderness and enter the ski area. Skier compliance has improved over time and skiers have adjusted to the change.

Campsite Inventories

There are currently 99 Wilderness campsites in the inventory. Sixty-five of those sites have been naturalized and are no longer considered sites but are kept on the campsite inventory to monitor and assess change to naturalized campsites, leaving 34 useable campsites in the Wilderness. 14 campsites in the Wilderness were monitored in 2012. Ten of the campsites were naturalized or remained naturalized. In 2011, 53 campsites in the Wilderness were inventoried. 36 of the sites inventoried in 2011 were naturalized or remained naturalized. An additional ten sites from Boulder Lake, Twin Lakes, Peterson Lake, and Cliff Lake were naturalized several years ago to bring those lakes into compliance with density standards. These sites must be monitored closely to maintain campsite standards.

In 2012, one campsite at Big Lake did not meet condition standards due to high levels of use and associated resource impacts. Six campsites were determined to be out of condition standards as of 2011. Three of these sites were located at Boulder Lake and three are at Sanders Lake.

Wilderness Rangers continually monitor for the establishment of new sites and then try to bring these sites back into standard through site management and restoration techniques.

Wilderness Rangers have also begun taking coordinates for a GIS campsite map that will display campsite locations. The development of this map will continue to be a top priority in the Rattlesnake Program of Work for 2013. The map will continue to be updated each year. Naturalized campsites will be kept on the map so the site can easily be located and monitored in the future.

Beginning in 2013, 1/3 of the 94 Rattlesnake Wilderness Area campsites will be inventoried each year, thus re-establishing a three year rotation schedule for campsite inventories in the Wilderness. Table 44 displays the rotation schedule to be adhered to when completing campsite inventories in the Rattlesnake Wilderness.

Technical Note: In an effort to create a more detailed and complete campsite database, campsite names have been replaced by campsite numbers. The first number indicates the closest road or trail to the site, followed by the site number. Those points that still have a site name and number have not been evaluated since Wilderness Rangers began recording latitude and longitude waypoints for each site. In 2012, a column with historical/geographical place name reference (ex: McLeod Lake) was added to the table to assist in easily locating the campsites. The historical/geographical place column should continue to be updated as inventories are completed annually. An additional table should also be created to keep track of condition index scores over time so that previous scores can be easily referenced in the future.

Technical Note: Campsite condition inventories/evaluations are only completed for sites that have been naturalized previously when use has occurred at the site since the last time an inventory was completed. If a Wilderness Ranger is monitoring a site that has been previously naturalized and the site has not been used since the last documented monitoring trip, only record the site as NAT within the LAC campsite inventory table and do not complete an a campsite condition inventory form.

Table 44- Rattlesnake Wilderness Campsite Inventory Rotation

Campsites to Inventory	Year
52-1, 52-2, 336-1—336-6, 333-1—333-15, Five Lakes/McLeod 1, 2, Rankin Lake1, 2, 515-1, 515-2, 1265-1—1265-3, and Sheridan Lake. Total Sites=33	2012
502-1—502-4, Twin Lakes 1-17, Cliff Lake 1-4, Lost Lake 1 and 2, Peterson 1 and 2, 516-1, 516-2, and Upper Stuart Peak 1-5. Total Sites= 32	2013
534-2—534-20, Carter Lake #3, 517-1—517-18 Total Sites=34	2014
52-1, 52-2, 336-1—336-6, 333-1—333-15, Five Lakes/McLeod Lake, Rankin Lake, 515-1, 515-2, 1265-1—1265-3, and Sheridan Lake. Total Sites=33	2015
502-1—502-4, Twin Lakes 1-17, Cliff Lake 1-4, Lost Lake 1 and 2, Peterson 1 and 2, 516-1, 516-2, and Upper Stuart Peak 1-5. Total Sites= 32	2016
534-2—534-20, Carter Lake #3, 517-1—517-18 Total Sites=34	2017

*Technical Note- When new campsites are found, they should be added to the inventory year of the sites within closest proximity. An effort should be made to keep the three year rotation balanced so Rangers can feasibly inventory all sites on the inventory for that year.

Table 45 Use and Users 2012 Rattlesnake Wilderness Campsite Inventory

Site Number	Geographic Identifier	Latitude	Longitude	Elevation	Current Condition Index	Condition Index Change	Last Year Inventoried
52-1	Bull Lake (north end)	47.03370	-113.83134	6112	NAT	NAT	2012
52-2	Primm Lake (north of Tr. 52)	47.01801	-113.83048	5649	NAT	NAT	2012
336-1		47.08914	-113.8380	6374	52	-3	2011
336-2		47.08699	-113.82104	6374	NAT	NAT	2011
336-3		47.08822	-113.82106	6374	48	+9	2011
336-4		47.08182	-113.79704	5862	46	+16	2011
336-5		47.06709	-113.83652	7160	NAT	NAT	2011
336-6		47.06648	-113.83696	7160	NAT	NAT	2011
333-1		47.07386	-113.84247	6523	NAT	NAT	2011
333-2		47.07391	-113.84272	6506	NAT	NAT	2011
333-3		47.07469	-113.84211	6500	NAT	NAT	2011
333-4		47.07465	-113.84275	6514	NAT	NAT	2011
333-5		47.07616	-113.84140	6504	55	+3	2011
333-5B		47.07622	-113.84195	6562	26	-2	2011
333-6		47.07391	-113.84792	6843	NAT	NAT	2011
333-7		47.08454	-113.84729	6843	NAT	NAT	2011
333-9		47.07723	-113.83641	6516	NAT	NAT	2012
333-10		47.07718	-113.83604	6497	NAT	NAT	2011
333-11		47.07548	-113.83333	6499	58	+12	2011
333-12		47.07333	-133.82983	6498	25	-1	2011
333-13		47.07247	-113.84096	6525	NAT	NAT	2011
333-15		47.07699	-113.83798	6501	39, NAT	-6	2011
Five Lakes Basin, Lake 3,	Lake 3, campsite1(north above lake)				NAT	NAT	2012
Five Lakes Basin, Lake 1	Lake 1, campsite1				NAT	NAT	2012
534-2		47.02637	-113.91308	6302	26	-9	2011
534-3		47.02658	-113.91403	6310	24(NAT)	NAT	2011
534-4		47.02752	-113.92532	6753	33	+2	2011
534-5		47.02687	-113.92578	6752	NAT	NAT	2011
534-6		47.02880	-113.92585	6778	NAT	NAT	2011
534-7		47.02888	-113.92560	6808	NAT	NAT	2011
Carter lake 3					NAT	NAT	2011
1265-1	Big Lake (southwest shore)	47.03822	-113.91678	6886	NAT	NAT	2012
1265-2	Big Lake (south end of dam)	47.03912	-113.91610	6869	38	+5	2012

Site Number	Geographic Identifier	Latitude	Longitude	Elevation	Current Condition Index	Condition Index Change	Last Year Inventoried
1265-3	Big Lake (north of dam, above lake)	47.04044	-113.91615	6893	NAT	NAT	2012
Sheridan-1	Sheridan Lake (east end)	47.07551	-113.84242	6650	NAT	NAT	2012
534-8		47.01910	-113.92089	6855	28	+28	2008
534-9, 9b		47.01863	-113.92013	6890	36	+1	2011
534-10		47.01950	-113.92095	6879	(22)NAT	NAT	2011
534-11		47.01953	-113.92122	6905	NAT	NAT	2011
534-12		47.01935	-113.92143	6904	22	NAT	2011
534-13		47.01896	-113.92239	6868	NAT	NAT	2011
534-14		47.01860	-113.92352	6901	NAT	NAT	2011
534-15		47.01777	-113.92475	6890	NAT	NAT	2011
534-16		47.01848	-113.92041	6860	31	-3	2011
534-19, 19b		47.01820	-113.91997	6874	40, NAT	NAT	2009
534-20		47.02600	-113.92047	6529	45	+15	2011
330-1		47.01123	-113.91459	7081	NAT	NAT	2011
330-2		47.01143	-113.91523	7083	33	-3	2011
330-3		47.01097	-113.91473	7060	NAT	NAT	2011
330-4		47.00980	-113.91383	7099	NAT	NAT	2011
330-5		47.01040	-113.91368	7089	NAT	NAT	2011
330-6		47.00922	-113.91520	7073	NAT	NAT	2011
330-8		47.01103	-113.91528	7059	NAT	NAT	2011
330-11		47.00368	-113.90151	6774	25	NAT	2011
330-12		47.01014	-113.91818	7224	43	-2	2011
330-13		47.01012	-113.91840	7222	NAT	NAT	2011
330-14		47.01072	-113.92028	7216	35	-1	2011
330-16		47.01151	-113.91884		NAT	NAT	2011
330-17		47.01070	-113.91933	7229	48	+7	2011
Cliff Lake 1					NAT	NAT	2008
Cliff Lake 2					NAT	NAT	2008
Cliff Lake 3					NAT	NAT	2008
Cliff Lake 4					27	NAT	2008
Lost Lake 1					NAT	NAT	2008
Lost Lake 2					NAT	NAT	2008
Peterson Lake 1					NAT	NAT	2008
Peterson Lake 2					NAT	NAT	2008
502-1		47.04978	-113.92395	6443	27	-3	2008
502-2		47.04897	-113.92492	6439	NAT	NAT	2008
502-3		47.04867	-113.92299	6457	NAT	NAT	2008
502-4		47.04883	-113.92325	6453	22, NAT	NAT	2008
517-1		47.05912	-113.93270	6938	NAT	NAT	2007
517-2		47.05965	-113.93300	6847	NAT	NAT	2009
517-3		47.05960	-113.93372	6912	40	+40	2009
517-4		47.06037	-113.93303	7049	NAT	NAT	2009
517-5		47.06135	-113.93657	6909	43	+1	2008
517-6		47.06150	-113.93705	6879	40	-4	2008
517-7		47.06223	-113.93787	6961	NAT	NAT	2009
517-8		47.06205	-113.93858	6924	NAT	NAT	2009
517-9		47.06217	-113.93997	7073	NAT	NAT	2009
517-10		47.06058	-113.93995	6944	26(NAT)	NAT	2008
517-11		47.01953	-113.92122	6905	NAT	NAT	2005
517-12		47.04608	-113.93204	6892	NAT	NAT	2008
517-13		47.04600	-113.93353	7013	25(NAT)	NAT	2008
517-14		47.04550	-113.93248	6998	45	-6	2008
517-17	Stuart Peak (summit)	47.00648	-113.92017	7900	NAT	NAT	2012
517-18		47.00615	-113.92097	6890	NAT	NAT	2012
516-2		47.03158	-113.98376	6830	NAT	NAT	2006
516 - 1		47.01961	-113.96867		NAT	NAT	2006
Rankin-1	Rankin Lake (west shore)	47.03199	-113.98363	6810	22	-	2012
Rankin -2	Rankin Lake (north of outlet)	47.03183	-113.98117	6815	23	-2	2012
McLeod-1	McLeod Lake (east end)	47.09767	-113.91552	7688	NAT	NAT	2012
McLeod-2	McLeod Lake (east end)	47.09655	-113.91422	7688	NAT	NAT	2012

The following scale of the weighted impact index is used in part to assess campsite condition:
Minimum impact: 20-23 Moderate impact: 24-34 High impact: 35-45 Extreme impact: 46-60

Factor:Vegetation

Table 46 Indicator, Opportunity Classes and Standards

Indicator	Opportunity Class	Standard
Insect Threat	1,2, & 4	No control
Noxious weeds	all	Controls are desirable; biological control preferred, other methods will be considered in project environmental analysis. Cutting meadow in Sawmill Gulch acceptable/desirable until more positive control approved Decisions subsequent to 1992 have included herbicide and biological weed controls.
Vegetative diversity	all	Monitor. Compare vegetative community composition every 10 years against previous decade's communities by aerial photo interpretation

Weeds threaten native plant communities, local ecosystems, and the Wilderness character of the Rattlesnake Wilderness. The movement of knapweed and other noxious and invasive weeds into the Wilderness has been slowed by weed management activities. Rattlesnake Road 99 serves as a primary vector for the movement and spread of weeds from humans, vehicles, livestock, and wildlife. Weed treatment, by the Forest Service, in areas of concentrated recreation use has reduced weed spread. Roads, trails, trailheads, campsites, winter range, dam maintenance areas, areas disturbed by wildfire, and heli-spots are also monitored and treated to reduce weed infestations when possible. Certified weed-free feed is also required on all Federal lands in Montana, including the RNRAW, which is another measure intended to reduce the spread of weeds.

Mountain Water Company (MWC) has both special use permits and easements (provisions specified in the Rattlesnake Wilderness Act of 1980) to operate and maintain dams and roads in the Wilderness. In order to address concerns about MWC dam operation and maintenance activities spreading weeds in the Wilderness, their special use permit requires a weed management and prevention plan. This plan has been implemented in past years and will continue to be implemented in the future. A recent history of Wilderness weed management is listed below.

In 2006, MWC completed a weed inventory of the Lake Creek trail and areas around the Carter Lake dam. The inventory identified the presence of the following weeds: Canada thistle, common tansy, Dalmatian toadflax, musk thistle, oxeye daisy, spotted knapweed and St. Johnswort. After the inventory was completed, the "Carter Lake Weed Mitigation and Management Plan" was developed by MWC and approved by the Forest Service. MWC follows weed prevention measures specified by the Carter Lake Weed Mitigation and Management Plan to prevent, control, and reduce new and established weed infestations around the dam.

In 2007, a weed mitigation plan that required MWC to treat weed infestations along their travel corridors was also completed and implemented. Under this plan, MWC provides funds to the Forest Service to monitor, map and treat weeds in areas used to access the dams. A six person MCC weed crew was funded for one week in 2007 to complete weed management activities. The MCC crew spot treated the Lake Creek trail (travel corridor) from the Wilderness boundary to Carter Lake. The Wrangle Creek trail from Little Lake to approximately one mile of the Wilderness boundary was also spot treated.

In 2008, MWC funded a Wilderness Ranger for one week to monitor the 2007 weed treatments and to conduct additional "search and treat" activities (refer to Table 47). In 2009, following two years of weed treatments along the Lake and Wrangle Creek trails and around the Carter Lake and Little Lake dams, MWC funded the Forest Service to monitor and determine the effectiveness of the 2008 weed treatments and to update the weed inventory. The inventory was completed and monitoring determined that the 2008 treatments were successful in containing and or reducing infestation size. However, well established weed species have not been eradicated at the sites. Weed infestations have been reduced. Continued weed monitoring and follow up treatments will be required in order to eradicate well-established infestations.

In 2010, MWC funds were used to treat high priority areas inventoried in 2009 (refer to Table 47). The areas treated in 2010 were monitored in 2011. 2010 treatments were determined to be effective.
Other than monitoring and hand pulling isolated weeds (a recurring patch of common tansy was hand pulled at Bull Lake in 2012), there were no Wilderness weed treatments completed in 2011. Monitoring of Trail #515 past the Wilderness boundary in 2012 determined that this trail should be a priority for weed treatment in 2012. Additional weed treatments should be completed along dam maintenance travel corridors and weed inventories monitored around the dams in 2012.

Table 47 Wilderness Weed Treatments 2010

Location	Weeds Treated	Control Used		Acres
Carter Lake Dam and Trail #534 from dam down to Sheridan Creek.	SK,CT,MT,OD,	Aminopyralid	6oz/ac	0.1
Wrangle Creek Trail #502	SK,CT,MT,OD,	Picloram	5oz/ac	0.33
Openings around Sheridan Creek off Trail #534.	SK,CT,MT,OD,	Aminopyralid Picloram	6oz/ac 16oz/ac	0.44
Rattlesnake Trail #515	SK, CT, MT, OD,	Picloram	6oz/ac	.66

*spotted knapweed (SK), oxeye daisy (OD), Canada thistle (CT), musk thistle (MT), houndstongue (H), Dalmatian toadflax (DT) yellow/common toadflax (YT)

Mountain Water Company Dam Maintenance

In 2006, MWC completed the Carter Lake dam outlet improvement project. Two MCC crews were used to lower the outlet stream channel leading from the dam in order to drain water that was backed up against the dam face. The project also allowed better access to the outlet pipe. Wilderness Rangers have developed a photo log of the Carter Lake project area. Photographs taken in 2007 were compared to those taken in 2006 when the work was first completed to assess re-vegetation, stream channel stability, weed infestations, and other resource damage that threatens the character of the Wilderness. Vegetation cover on and around the dam increased from 2006-2007in areas impacted by the project. The stream channel was also stable as of June 2007 and no other resource impacts, with the exception of weeds, were found in the project area. The project area should be re-monitored in 2013. In the fall of 2010 and 2011, MWC conducted maintenance on the Big Lake dam using MCC crews for two weeks each season. MCC camped at the Snowshoe Inn site. MCC crews receive Leave No Trace instruction and use LNT practices when working in the Wilderness. The MCC camp was inspected by Wilderness Rangers in October 2010 and 2011. The camps were clean and met standards. No MCC camps were installed in 2012.

Table 48 Mountain Water Company Dam Status as of Fall 2012

Lake	Valve-Status
Sanders	Open
Big Lake	Open
Little Lake	Open
Sheridan Lake	Open
Carter Lake	Open
Glacier Lake	Open
McKinley Lake	Open
Worden Lake	Closed

Table 49 Mountain Water Company 2012 Activities, Including Mechanized/Motorized Use in Rattlesnake Wilderness

Date	Travel Mode/Destination	Number of People	Purpose
4/10/12	Helicopter	4	Inspections
4/25/12	Helicopter	4	Inspections
5/16/12	Helicopter	4	Inspections
6/12/12	Helicopter	3	Inspections
10/09/12	Helicopter	5	Inspections
10/16/12	Helicopter	3	Planned maintenance
10/17/12	Helicopter	3	Planned maintenance
10/16/12	Helicopter	4	Planned maintenance

Wildfire

The RNRAW does not have a Fire Use Plan. A Fire Use Plan should be developed and addressed during the Forest Plan Revision process.

There were two fire incidents managed in the Rattlesnake Wilderness in 2012. A lightning caused fire on the ridge between Twin Lakes and Roosevelt Lake had a Smokejumper Crew and one Helitack Crew dispatched to contain the fire. Another fire was located and contained with a Helitack Crew on the Ridge west of Stuart Peak. Chainsaw and helicopter use were authorized by the Forest Supervisor for both of these incidents.

In a separate incident, a campfire was left unattended and smoldering at Boulder Lake. Wilderness Rangers promptly extinguished the escaped campfire. The party that allowed the campfire to escape was contacted by Wilderness Rangers along the Boulder Creek trail prior to the discovery of the fire by the Rangers. The Wilderness Rangers were able to provide a license plate number and vehicle description to Law Enforcement.

Fire Monitoring

In 2006, Wilderness Rangers, with the help of the Wilderness Institute, continued monitoring the 2003 Mineral-Primm fire effects. The monitoring followed guidelines established in the 2003 Mineral-Primm Fire Suppression Monitoring Plan. The plan required monitoring objectives for each of the 35 points. These points are to be monitored by Wilderness Rangers every two years. When there are no longer resource impacts at each of the points and no further monitoring is deemed necessary, the points will be removed from the list. The plan requires the monitoring of soil condition, watershed impacts, interruption of recreational opportunities, and Wilderness quality.

In 2008, 2009, and 2012 Mineral Primm fire effects were monitored at the remaining monitoring points. Most of the remaining areas had recovered to a point that they were removed from the monitoring list. The remaining points are scheduled to be monitored in 2013.

Table 50 Mineral Primm Fire Monitoring Points

Site Description	GPS Name on Map	What to Monitor	Condition
Fireline-explosive/ Hand Line ('09)	From HANDFLE to HANDFLEEND	Noxious weeds, recovery, erosion on steep parts, social trail development where line meets 504 and 515 trails.	Thistle present on line(47.04340, 113.86156 and 47.04388, 113.86401). Line present with game use.
Porcupine Trailhead ('09)	PORC TH	Noxious weeds and recovery	Spotted knapweed prevalent and treated in '04, 06', and 08'. Canada Thistle is becoming established at the trailhead and 1 mile up the trail.

Wildlife/Special Elk Hunt

In the spring of 2005, FWP completed an aerial elk survey north of Missoula and observed 252 elk in the North Hills herd. With an estimated FWP predicted detection rate of 75%, the North Hills herd was thought to number approximately 336 head of elk. Portions of this herd summer in the RNRAW. The numbers in the herd continued to increase from 2006 to 2012. This upward trend has resulted in an increase of human-wildlife conflicts with private land owners in Grant Creek.

To mitigate residential conflicts from this rapidly expanding elk population, FWP initiated, in cooperation with the Lolo National Forest, an early season rifle-hunt in portions of the RNRAW in 2006. This hunt has occurred annually from September 15th to the last day of the general rifle season.

In 2006 and 2007, FWP offered hunters 105 permits. From 2008 to 2012, FWP decreased the number of permits to 80 (75 antlerless elk and 5 either-sex).

Over the past few years, the North Hills elk herd has migrated earlier from their summer range in the RNRAW to their winter range which generally occurs on private land. The elk have also been remaining on their winter range later in the spring. Opportunity to harvest those elk during the general rifle season is difficult because of limited access to private property. Without effectively harvesting and reducing the size of the elk herd, the North Hills herd was projected to double within five years as of 2006. Because of the implementation and success of the Rattlesnake hunt, as well as a late season game damage hunts on private lands in the North Hills, the projected doubling rate for the population has lengthened to approximately seven years.

From an elk management perspective, the Rattlesnake early season elk hunt has been an integral component that allows FWP to better manage the North Hills elk herd. However, the hunt adversely impacts the Wilderness resource and requires additional management action. The Forest Service supports this special rifle hunt contingent on the successful management and mitigation of the hunts impacts to the Wilderness resource. The special hunt is becoming more popular, and after the sixth year, impacts to the Wilderness do continue. However, impacts appear to be decreasing due to proactive management. For example, optional pre-season meetings are held with permit holders. Wilderness values, issues, regulations, and LNT practices are presented and discussed. It is important to note that the attendance of these preseason meetings is generally low. In 2012, only 17 hunters out of 80 hunters with permits attended the meeting. FWP and the Forest Service have also developed information and regulation packets that are sent to every hunter. Copies of the food storage order were also sent to all participants of the 2012 hunt. These hunts also require many extra patrols by both FWP and the Forest Service to implement mitigation measures in order to meet the standards required in the Rattlesnake LAC Management Direction. FWP will continue coordination with the Lolo National Forest to reduce Wilderness impacts from this hunting opportunity.

FWP sends a follow up survey and questionnaire to all elk permit holders after each hunting season. The results of the 2012 survey are not available at this time.

Table 51 Rattlesnake Elk Hunt Survey Responses

Survey Component	2006	2007	2008	2009	2010	2011
# Hunters responding to survey	52	55	53	53	51	55
# Respondents that did not hunt	13 (25%)	13 (24%)	5 (9%)	12 (23%)	6 (12%)	10(18%)
# Respondents that hunted	39 (75%)	42 (76%)	48 (91%)	41 (77%)	45 (88%)	45(82%)
# Elk harvested	9	16	14	9	17	14
# People who harvested an elk	9 (23%)	14 (26%)	14 (26%)	8 (20%)	14 (27%)	14(31%)
# People who camped at any time	38 (97%)	40 (95%)	29 (60%)	24 (59%)	26 (58%)	32(71%)
# People who used bikes at any time	15 (38%)	10 (24%)	29 (60%)	22 (54%)	26 (58%)	24(32%)
# People who used stock at any time	12 (31%)	2 (5%)	7 (15%)	6 (15%)	8 (18%)	13(29%)
# People who hunted exclusively on foot	13 (33%)	21 (50%)	16 (33%)	13 (32%)	14 (31%)	-

RNRAW Hunt Impacts: Campsite encounters associated with this hunt were out of standard in the Rattlesnake National Recreation Area on 9/30/12. Multiple food/attractant storage violations have also been associated with the hunt. Violations generally have occurred at camps at Elk Meadows and camps along the Porcupine trail. Violations decreased in 2012 which may be attributed to increased patrols and warning notices issued in 2011. Patrols were increased again in 2012 along with education efforts, public contacts, and the issuance of violation notices.

If on the ground FS / FWP presence is not maintained at current staffing levels, it is likely that the Wilderness resource will be degraded by this hunt. While bow hunting occurs in the Wilderness prior to the special hunt,

the 2006-2012 special early elk rifle hunt has attracted more hunters and resulted in greater impacts to the Wilderness. Examples of the hunt's impacts to the Wilderness (2006-2012) include:

- chainsaw use in the Wilderness (firewood cutting and trail clearing)
- re-establishment and increased impact on non-system user trails (blazing, flagging, sawing out)-2012
- bear food storage order violations-2012
- improper human waste disposal
- tree cutting-2012
- high impact horse holding practices (tying to trees, damage to soil, vegetation and trees)-2012
- horse drawn heavy wagon use (large volume camp impacts, improper horse holding, off trail travel at Elk Meadows)-2012
- litter increase (more than during summer backpacker season)-2012
- campsite encounters out of standard-2012

Wilderness Rangers found no chainsaw use in the Wilderness in 2012. Some chainsaw work was observed that included the re-establishment of a non-system trail along NFR 4323 (Notch Trail) in the West Fork Gold Creek area. Stock use, from the early elk season hunt, continues to have the greatest impact on the Wilderness resource due to lack a lack of meadows, feed, tying horses to trees, and lack of water for stock. Many early season elk hunters, based on surveys, seem to be accessing the hunting area by foot or mountain bike, rather than horseback. Foot and low volume mountain bike access (out of Wilderness) has lower resource impacts than the use of livestock.

High Elevation Lake Surveys

FWP initiated a survey of the Rattlesnake Wilderness lakes in 2006. The study included fisheries assessments, amphibian surveys, lake bathymetric mapping, water quality measurements, and notes on levels of recreational use (camp sites, fire rings, trails, litter, etc). From 2006-2009, a total of 40 mountain lakes greater than one acre in size in the Wilderness were surveyed by FWP. Forty percent (16) of these waters were fish-bearing, with the majority supporting self-sustaining (wild) trout populations. The exceptions are three lakes in the upper Gold Creek drainage which are stocked periodically with westslope cutthroat trout to sustain these fisheries. Fish-bearing lakes predominantly supported westslope cutthroat trout. Rainbow trout and Yellowstone cutthroat trout also were present in four lakes. Twenty-four fishless lakes greater than one acre in size and numerous ponds/wetlands were also surveyed.

In 2010, FWP surveyed the four Farmers lakes in T. 14 N., R. 18 W., Sections 3 and 9. These lakes are all greater than one acre in size. All four lakes were found to contain no fish, however, the three largest lakes are capable of supporting fish. There was no sign of human use at any of these lakes with the exception of a single fire ring found outside the Wilderness boundary at Farmers Lake # 3 in Section 9. Columbia spotted frogs were abundant where emergent vegetation was present (as is usually the case). No long-toed salamanders were observed in the lakes, but high densities were observed in small potholes and wetlands adjacent to the lakes.

There are now only two lakes left to survey in the Rattlesnake drainage: Rattlesnake Lakes #2 and #3 located in T. 15 N., R. 18 W., SE ¼Section 28 and NE ¼ Section 32. These lakes may not be surveyed due to remoteness and difficulty of access.

During August of 2012, ecological, water quality, and recreational indicators were measured in the Rattlesnake Wilderness Area at Sanders Lake as part of the U.S. Environmental Protection Agency's National Lakes Assessment (http://water.epa.gov/type/lakes/lakessurvey_index.cfm). Sanders Lake was selected as part of a statistical random sample design to be indicative of lakes within similar ecological regions. Information from this survey will be used to determine the state of the nation's lakes in 'good, fair, and poor' condition. Once processed, the data will be made available to the Lolo National Forest for a site-specific analysis, such as determination of trophic status (nutrient availability), acidity, and many other variables. Results for Sanders

Lake are anticipated to be available for the Forest in 2013, while the nationwide report is due to be published in 2014.

Summary

Summary Table 1 Rattlesnake National Recreation Area

Standards Met (Table 9)	Standards Not Met
Group size/ trail encounters: **Met standard**	Group size/ trail encounters: **NA**
Group size/ camp encounters: **NA**	Group size/all groups met standard: **Campsite Encounters for OC 4 were out of standard on the following dates: 9/2/12 (Labor Day Weekend), 9/30/12 (All parties were associated with the Early Season Elk Hunt.) (Refer to Table 11).**
Campsite density: **Met standard**	Campsite density: **NA**
Campsite condition: **11 camps met standard**	Campsite condition: **1 camp out of standard (99-3, 515.7 Creekside South) (Refer to Table 21)**

Summary Table 2 Rattlesnake Wilderness Area

Standards Met (Table 38)	Standards Not Met
Trail encounters: **Met standard**	Trail encounters: **NA**
Campsite encounters: **NA**	Campsite encounters: **Wilderness Campsite Encounters were out of standard on 7/6/12, 7/07/12, 07/21/12, 08/10/12 (Refer to Table 38).**
Campsite density: **14 campsites met standard**	Campsite density: **NA (Refer to table 45)**
Campsite condition: **14 campsites met standard**	Campsite condition: **one campsite out of standard (Big Lake 1265-2 –due to high use) (Refer to table 45)**

Summary of Observations for 2012

Rattlesnake NRA

- Compliance with dog / leash regulations was an issue throughout the season. Half of the violation notices issued were to residents that were aware of leash requirements.
- While use of Forest Service provided Mutt Mitts has decreased the amount of dog waste left un-bagged, some visitors fail to dispose the mutt mitt prior to leaving the NRA.
- Caching and abandonment of food and gear is an increasing problem. Multiple camps were found with cached tents, food, and other provisions, violations of stay limit and food storage regulations. Incidents were associated with archery and early season elk hunt (rifle camps).
- Multiple groups were cited for violating the food storage order. All groups knew about the regulation when questioned but failed to comply.
- One group of earl season elk hunters has violated multiple regulations in the past three years. FWP will be consulted.

Wilderness

- Boulder Lake and Upper Twin Lake continue to see high levels of use and resource damage. Resource and regulation violations decreased at Boulder Lake due to increased patrols and education efforts. However, Wilderness Rangers must increase their time spent at these lakes patrolling and enforcing regulations.
- The Porcupine User Trail showed minimal signs of resource impacts in 2012. Both early season and regular rifle season elk hunters continue to set up camps off of the faint remnant of this trail near Porcupine Creek. There has been no increase in the total number of camps installed throughout the season. Although there were no efforts to re-open the PUT in 2012, Wilderness Rangers should continue monitoring efforts. A connector trail from NFR 4323 was reopened in by chainsaw outside of the Wilderness for approximately ½ mile. It appeared the trail was used as a connector to the PUT. This trail should be barricaded, naturalized, and monitored in 2013. The NFR 4323 appears to be cleared of downed trees multiple times throughout the year to accommodate both stock and bikes.
- The Boulder Lake Trail #333 reroute near the Trail #518 junction has been firmly established and the previous section of Trail #333 has naturalized. The lower portion of Trail #333 at Boulder Lake was cleared from the ridge to the lake. Social trails close to the lake shore have been barricaded and naturalized. Social trails at this location should be monitored in 2013.
- Stock use was limited during the summer season. By November, increased resource damage from stock was observed at Elk Meadows at end of season. The regulation sign was replaced at the entrance to Elk Meadows in 2012 after it was vandalized in 2011. Increased patrols during the hunting season and issuance of citations should be used to reduce resource damage at this site in the future. The Porcupine Trail #504 should be cleared prior to the hunting season. The trail was not cleared in 2012. Hunters with stock cleared only cleared select portions of the trail (not to standard)and re-routes have started to develop.
- Complaints from Wilderness visitors, regarding stock "trashed sites" at Sanders Lake were received by Wilderness Rangers in 2012. LNT stock education should continue to be emphasized. Violation Notices should also be issued for resource damage and possession of non-certified forage products.
- The two trail re-routes through Gold Creek Meadows completed in 2012should be monitored in 2013 for use and to determine if the old trail between the re-routes should be barricaded.
- The lead Wilderness Ranger should continue to recruit volunteers from the Recreation/Environmental Studies/Wilderness and Civilization classes at the University early in 2013.

THE END